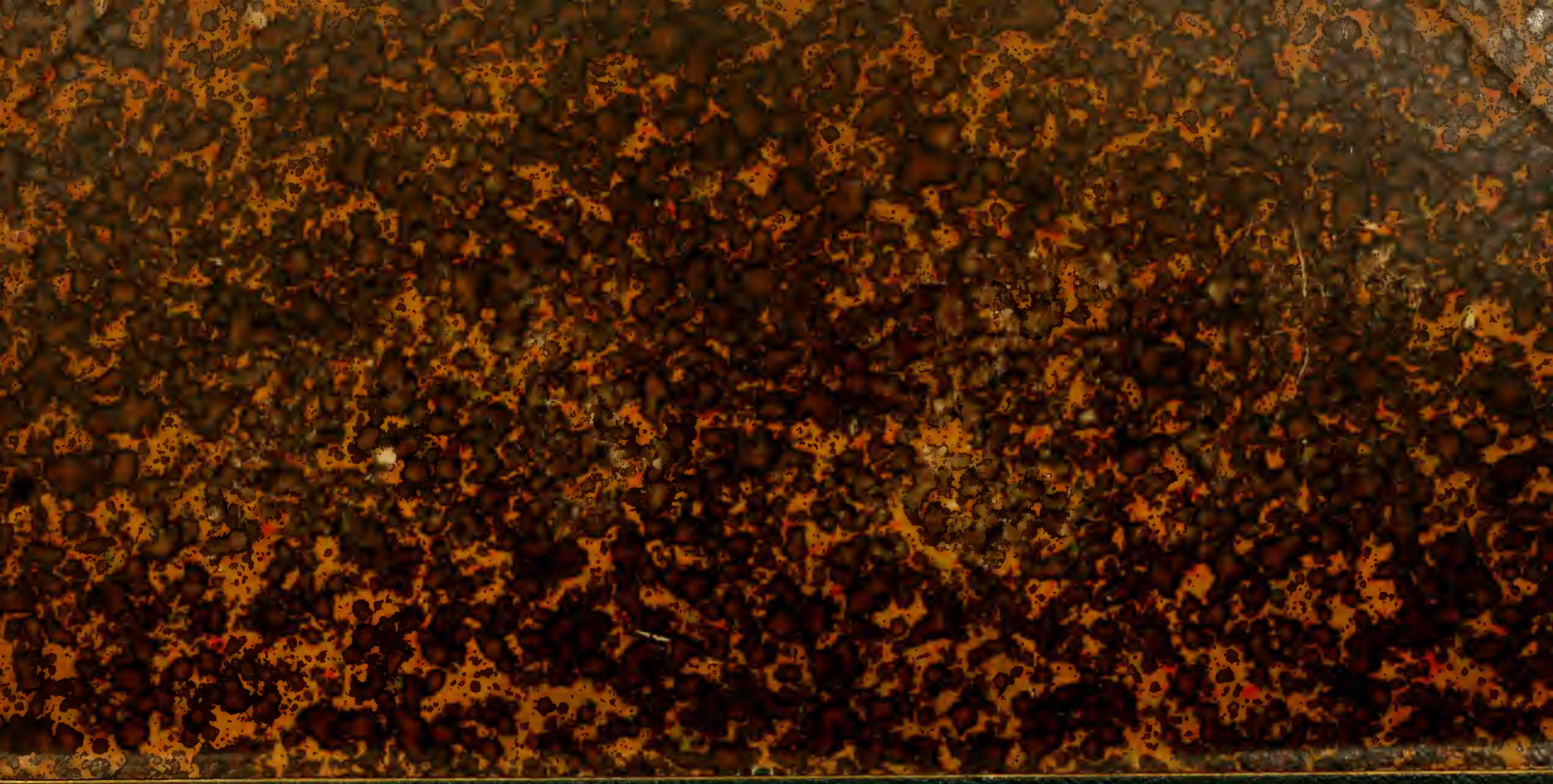

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TRANSACTIONS

OF

THE CANADIAN INSTITUTE.

VOLUME IV., 1892-93.

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TRANSACTIONS

OF

THE CANADIAN INSTITUTE,

SESSION 1892-93.

NOTES

ARCHÆOLOGICAL, INDUSTRIAL AND SOCIOLOGICAL,

ON THE

WESTERN DÉNÉS

WITH AN ETHNOGRAPHICAL SKETCH OF THE SAME

BY THE REV. FATHER A. G. MORICE, O.M.I.

Read 4th November, 1893.

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INTRODUCTION.

"Archæological" is rather inappropriate in connection with the present monograph, whose scope embraces nothing archæan or really ancient. The prehistoric Dénés are the Dénés of but yesterday. For, what are the one hundred years which have elapsed since the discovery of their country compared with the twenty or more centuries which separate us from the famous civilizations of ancient Egypt and Assyria? Yet, to check possibly too sanguine expectations from such archæologists as may happen to read these lines, I hasten to declare that it is perhaps more easy to present the lover of technological lore with graphic illustrations of the arts and industries which flourished among the subjects of the Pharaohs and the Assyrian monarchs, than to thoroughly illustrate from actual specimens the *ensemble* of the arms, working implements, household utensils and ceremonial paraphernalia, which should concur in reconstructing the peculiar mode of life pursued by the primitive Dénés. The original Egyptians and Assyrians have left us, besides authentic records of their own doings on imperishable material what promises to prove well nigh unlimited stores of practical illustrations of their past sociology in their tombs, their temples and other public monuments. So that the antiquarian's task is greatly facilitated by the abundance of the material at his command. Furthermore, where the hieroglyphic and cuneiform chronicles fail to clear up difficulties of interpretation or to enlighten him on the particular use of ancient implements, he has only to delve into Herodotus and other historians for the desired light.

Not so, however, with regard to the prehistoric Dénés. As I have elsewhere demonstrated,* that family of American aborigines, and more especially the Carrier tribe to which prominence will be given in the following pages, is characterized by a wonderful power of imitation and self-adaptation which prompted it, upon the advent of the whites, to discard most of its native customs, indigenous weapons and working implements. As a natural consequence, many of the latter are now in a fair way towards complete obliteration. Moreover, the nation's historians, I mean the old men who witnessed the manufacture and use of some archæological articles the duplicates of which have caused speculations from more than one antiquarian, are fast disappearing from

*"Are the Carrier Sociology and Mythology Indigenous or Exotic?" Trans. Roy. Soc. Canada, Section II. 1892.

the scene of this world. So that the sooner the Déné technology is brought to light, the better it will be in the interest of science.

Indeed, should any value whatever be attached to the present monograph, I feel quite certain that it will be entirely on account of its opportuneness. Undertaken twenty-five years ago, it could probably have been made more exhaustive. After the lapse of an equal space of time, its usefulness as a contribution to archæological knowledge would be problematical. I am at present the possessor of the only remaining specimens of some objects illustrative of the past Carrier sociology, and my familiarity with the language and original customs of the Indians to whose spiritual wants I minister, might not be enjoyed by a successor among them until time and circumstances deprive its use of much of its value.

These considerations, corroborated by the requests of scientists whose advice I have not the right to disregard, have emboldened me to attempt a description of such technological objects as can be illustrated from specimens in my possession or which are still in common use among the Western Dénés. The number of these, as will soon appear, is somewhat limited, and therefore my task cannot be very arduous. I only regret that my mineralogical shortcomings render an exact description of the material used in the fabrication of stone implements in a few cases impossible. For the identification of such rocks as are adequately described, I am under obligation to Dr. G. M. Dawson, Assistant Director of the Geological Survey of Canada, Ottawa.

As technology is the prime object of this monograph, the industries of the Western Dénés will be mentioned in so far only as may be necessary for the clear understanding of the nature and use of the objects therein described. Which statement should not convey the idea that I intend to make light of their claims to importance in an ethnological contribution. With a little reflection, it will become apparent that all human industries need material aids or means to manifest themselves, and their results must also take a concrete form. Now, these palpable data, be they the products of human ingenuity or the instruments employed in their development, are *per se* technological items, and by reviewing the latter, one cannot help treating of the former. Therefore I simply mean to say that the archæological, rather than the industrial, plan will be adopted in the following pages. In other words, our divisions shall be based, not on the industries of the Western Dénés, but, as far as practical, on the material of the weapons, tools, utensils, fishing devices and other implements under consideration.

As for the third, or sociological scope of this paper, I think that our title will be justified not only by numerous transient mentions of native customs and practices, but more especially by extended descriptions of the Aborigines' usages and superstitions in connection with fishing and trapping, their domestic economy as regards diet and remedies, their ceremonial dress, their habitations, etc. However, for more systematic information concerning the Déné sociology, the reader must be referred to another paper published some years ago under the title of "The Western Dénés ; their Manners and Customs." *

Mythology may be regarded as a mirror wherein the psychological ideas and the particular social institutions and mode of life of a people are faithfully reflected. Therefore I have not deemed it inconsistent with the nature of my subject to intersect the following pages with a few short legends or traditions, especially when these may prove a help towards the formation of a more correct idea of the objects hereafter described.

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* Proceedings Can. Inst., vol. vii., p. 109, *et seq.*

CHAPTER I.

ETHNOLOGICAL SKETCH.—THE NAME "DÉNÉ."

For the benefit of such of my readers as may not have seen my former essays, I must repeat that by Dénés I mean that large family of American Aborigines commonly known under the names of Tinné, Tinneh, Tenni (Bompas), Tenne (Kennicot) and Athapaskans. As I have already pointed out elsewhere, all of these appellations are inappropriate. For more reasons than one, they should, in my estimation, be discarded in favour of "Déné." Neither Tinné nor Tinneh have any meaning in the dialect of the many tribes into which that extensive stock is divided. The ethnologists who are responsible for these nicknames gathered them from the desinence of several tribal names probably badly pronounced, and certainly misspelt, by the earliest *voyageurs* or traders who made mention of these Aborigines. The verbal suffix *'Tinne*, or *'Tenne*, is evidently the term they aimed at rendering. Now to the native ear the difference between T and 'T is infinitely greater than is with us that which exists between such letters as W and G, since these are commutable in the Aryan languages,* while the former are not in the Déné dialects. Thus, in Carrier, *ta* means "lip," and *'ta* "feather;" *to* means "up," and *'to* "nest;" *tis* stands for "younger sister," and *'tis* for "coals;" *taz* is the root for "heavy," and *'taz* signifies "backward;" *nəs̀taih* is equivalent to "I dance," while *'nəs'taih* means "I ripen." These contrasts could be multiplied almost *ad infinitum.*

Furthermore, 'Tinne, being a suffix, cannot stand without its verbal support. Thie would-be noun is composed of the root of the verb *hwos'ten* (or *kwos'tin*, etc., according to the dialect) which means "I inhabit," and the personal plural particle *ne* (or *ni*) resulting in the verbal noun *hwo'tenne* (or *kwo'tinni*, etc.) "inhabitants," which when suffixed to a name of river is contracted into *'tenne*, etc., as in *Naz-Koh-'tenne*, *Tsiǫ-Koh-'tinni.* Thus this pretended word corresponds in every particular—save that in Déné it is a verbal not substantive, affix—to the final *-enses* of Lugdunenses, Massilienses, Carthaginienses, Colossenses, etc. Now who ever dreamt of denominating by that final the latin speaking peoples? Who would, for instance, call *Ens* the French nation

* As is evident from the conversion of William into Gulielmus, Guglielmo, Guillermo, Guilherme and Guillaume; of War into Guerre and Guerra, etc.; of Warrant into Garantir, etc.

because it designates as Parisi*ens* the inhabitants of Paris ; as Londoni*ens* those of London, etc.? Yet the identity of the two cases is so evident that I need only translate the above, and say London-hwo'tenne, Palî-hwo'tenne, to bring it home to the dullest intellect. As with the *-enses* and the *-ens* of the Italic tongues, so it is with the *'tenne* of the Déné idioms ; it never applies but to names of places or at least of ethnographic divisions. Another point of similarity is that it varies with the dialects, being *'tenne* in Carrier, *'tinni* in Tsiɭkoh'tin, *'qenne* in Tsé'kéhne, etc.

Lastly the correct pronunciation of these word-endings requires a lingual explosion which cannot be obtained except by those already initiated into the mysteries of the Déné phonetics. Hence the absurdity of designating a whole nation by an accidental suffix, impossible of pronunciation to the great majority of the readers, which is no word of itself and changes according to the dialect of some twenty or more different tribes.

Another name no less widely used to denominate the Déné stock, and for which Gallatin is said to be responsible, is "Athapaskan." Now fancy the propriety of calling the whole British, not merely English, race, say Bristolians or Manchesterians! The Bureau of Ethnology of the Smithsonian Institution which has adopted this name in its official publications has to confess that "it has been objected to by a number of missionaries—students of various dialects of this family in the North-West—but," it is added, "priority demanded that Gallatin's name should be retained." * Methinks, however, that time cannot of itself convert a wrong into a right.

Rev. E. Petitot replaces either vocable by Déné-Dindjié, thereby "uniting in one compound word the southermost tribe, the Chippewayan or Déné, with the northermost, the Loucheux which calls itself Dindjié."† This name, which is undoubtedly a vast improvement on any of the above mentioned, and has the merit of containing two genuine Indian words, correctly spelt, has perhaps the disadvantage of unwittingly contracting in the mind of the reader the area covered by the nation thereby designated. The Chippewayans are *not* the most southerly branch of the family not only on the North American continent, but even within British America. The Tsiɭkoh'tin and the Carriers inhabit a stretch of land several degrees of latitude more to the south and are nevertheless territorially connected, without any intervening gap, with all the North-

* Bibliography of the Athapaskan Languages, by J. C. Pilling, p. v. ; Washington, 1892.

† *Monographie des Déné-Dindjié*, p. xix. ; Paris, Leroux, 1876.

ern Déné tribes. Therefore, on his own basis of word formation, the abbé Petitot should call the whole race Təni-Dindjié,* not Déné-Dindjié.

But we should not overlook the numerous offshoots it has spread out through the Western and Southern States of the American Union, and whose term for "man," and consequently for themselves considered as aborigines, is practically identical with "Déné."† Why then should we not call the whole stock *Déné*, after the native name of the most central—taking into consideration the southern scattered tribes—and one of the most populous branches thereof?‡ We could perhaps find a precedent for this in the names of such European peoples as the Italian, the French and even the English, which came to be given the entire nation after they had long represented one of the most important of its original tribes, the Itali, the Franks and the Angles or Angli.

Despite their minuteness, the foregoing remarks have been deemed necessary since their substance, as embodied in a foot-note to a former paper by the writer does not appear to have received the attention he cannot help thinking it deserved at the hands of Ethnologists. Even the few who have noticed it now seem to labour under the impression that the Dénés are a branch of the Athapaskan family lately made known to the scientific world!§ Such is the force of habit! Others suppose that Tinne and Déné are the same word under two different dialectical forms.‖

DISTRIBUTION OF THE DÉNÉS.

No other aboriginal stock in North America, perhaps not even excepting the Algonquian, covers so great an extent of territory as the Déné. The British Isles, France and Spain, Italy and any two or three of the minor European commonwealths taken together would hardly represent the area of the region occupied by that large family. And yet it is no exaggeration to say that few American races are less known than the Northern Dénés who, in point of territory, constitute the main bulk

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* *Təni* is the Tsi|Koh'tin word for "man."

† It should be remembered in this connection that in all the Déné dialects the vowels have almost no linguistic importance whatever, the quintessence of the words being condensed in the initial consonants of each syllable. Also, it may be worth noting here that T and D, P and B, G and K, etc., are commutable even within each separate dialect.

‡ The aboriginal race of the Alaskan littoral is called Tlingit after the word it uses to say "man." Why should this not also be the case with the Déné family?

§ The Athapaskan Bibliography, *passim*, 1892.

‖ Language as a test of Mental Capacity, by H. Hale. Transact, R. S. C., p. 81, 1891.

of the whole nation. West of the Rocky Mountains, they are to be found from 51° 30′ of latitude to the borders of the Eskimo tribes, while on the east side of the same range they people the immense plains and forests which extend from the Northern Saskatchewan down almost to the delta of the Mackenzie River. From West to East they roam, undisputed masters of the soil, over the almost entire breadth of the American Continent, though a narrow strip of sea shore country separates their ancestral domain from the waters of the Pacific and those of the Atlantic. With that unimportant restriction, they might be said to occupy the immense stretch of land intervening between the two oceans!

In the words of Horatio Hale, this is, east of the Rocky Mountains "a dreary region of rocks and marshes, of shallow lakes and treacherous rivers, offering no attractions except such as the hunter finds in the numerous fur-bearing animals which roam over it and afford the native tribes a precarious subsistence. When this resource fails, they live on lichens which they gather from the rocks."* West of the Rockies, the country inhabited by them is rugged and heavily timbered, dotted with numerous deep lakes, and intersected by swift, torrential rivers. Their staple food is venison and salmon, according to the geographical position of their tribal grounds.

I have already given, in a volume of the "Proceedings of the Canadian Institute,"† the names and habitat of the northern tribes together with their approximative population. Let me only remark that in that list I classed the Beaver Indians as a separate tribe merely to conform to the long established custom of the traders and missionaries. But as in America, Ethnography is based chiefly, if not entirely, on Philology, I must explain that, from a philological standpoint, the Beavers (*Tsa'tenne* in Carrier) are genuine Tsé'kéhne. The idiomatic differences noticeable in the speech of these two artificial divisions are not any more pronounced than those which exist between the dialects of the Lower and the Upper Carriers. The reason the Beavers go by a distinctive name even among their congeners is that, being citizens of the plains, they cannot with propriety be called Tsé'kéhne or "Inhabitants of the Rocks," viz.: the Rocky Mountains.

For the perfect completeness of our aboriginal census, we should add to the above the Sarcees, a band of Tsé'kéhne who, upon a difference

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* Language as a test of Mental Capacity, p. 81; Transact. R. S. C. Vol. IX., Sec. II, 1891.

† The Western Dénés, etc., Proc. Can. Inst. Vol. VII., p. 113.

arising from a trivial offense,* separated, not very long ago from the main body of the Déné nation and were adopted by the Blackfeet, an Algonquian tribe, among whom they have since lived, while keeping their linguistic autonomy. They do not number more than 100 souls.

An ethnologic problem which is not yet, and will perhaps never be solved, is the question, How did it come to pass that large portions of the Déné nation detached themselves from the main stock and migrated south? When did this exodus occur? What was the route followed by the adventurous bands? The man is probably yet unborn who will satisfactorily answer these questions. It may be that the interested tribes have some legends or traditions which might throw some light on the subject; but I think this is hardly the case.† As far as the northern Dénés are concerned, they do not even suspect the existence of any kinsmen south of the Tsiqkoh'tins' territory. Two facts only seem pretty safely established, namely: the separation of the southern from the northern tribes happened centuries ago; and, moreover, the national movement resulting in the division of the nation into two different camps was from north to south. The first assertion is proven by the fact that "when the Spaniards first met them [the Navajos] in 1541, they were tillers of the soil, erected large granaries for their crops, irrigated their fields by artificial water-courses or *acequias*, and lived in substantial dwellings, partly underground."‡ In support of the second statement, I need only refer to a tradition current among some western tribes according to which "days were formerly exceedingly short; so short indeed that sewing the edge of a muskrat skin was all that one woman could do between sunrise and sunset." This unmistakably points to the arctic regions as places of previous residence.

Unknown to themselves, important branches of the great Déné tree thrive thousands of miles away from the parental stem. As far as I can ascertain from the latest and most reliable source§ available, they are, or were until recently:—

---

* According to Mr. W. E. Traill, an H. B. Co's officer who has passed many years in close proximity to the Sarcees, this separation was caused by the following circumstances: A party of Tsé'kéhne were target shooting when a dog happened to take on the arrow planted in the ground as a target one of those liberties of which the canine gent is so fond. Thereupon the dog was shot by the possessor of the arrow, upon which that of the shooter was killed by the master of the original offender. Then followed numerous reprisals which could only be stopped by the voluntary departure of one band of related families which became the Sarcees.

† The above had been written for some time, when I read in Dr. Brinton's *American Race* that "the Navajos have no reminiscence of their ancestral home in the North."

‡ Brinton's *American Race*, p. 72, citing A. A. Bandelier "Indians of the Southwestern U. S."

§ 60th Annual Report Commissioner of Indian Affairs, 1891.

1. The Kwalhiokwas *, the Umkwas and the Totunies in Oregon. The Report of the Commissioner of Indian Affairs, for 1891 (Vol. II., p. 82), gives 78 as the number of the Umkwa population in the Grande Ronde Agency, with additional, though undetermined, numbers in the Siletz Agency. According to the same authority, the Totunies on Rogue River aggregate 47, while their congeners on the Siletz reserve cannot be numbered owing to their intermarriages with alien tribes.

2. The bands respectively called Hoousolton, Miscolt, Hostler, Matilden, Kentuck, Tishtangatang and Siaws in California†, but better known under the collective name of Hupa, from that of their common reservation in the Hupa Valley. They aggregate 492.

3. The Wailáki, likewise on the Pacific (Gatschet), numbers unknown.

4. The Navajos, in Arizona, the most populous and flourishing of all the Déné tribes, since they number, according to the latest and most accurate accounts, no less than 16,102 souls.‡

5. The various tribes of Apaches of which the following is a list showing their habitat and present population :—

(a)	The Oklahoma Apaches, in Oklahoma Territory	325
(b)	The Jicarilla Apaches, in Colorado.....	824
(c)	The Mescalero Apaches, in New Mexico	531
(d)	The White Mountain Apaches, in Arizona.....	130
(e)	The Coyotero Apaches, in Arizona.....	423
(f)	The San Carlos Apaches, in Arizona.....	831
(g)	The Tento§ Apaches, in Arizona.....	760
(h)	The Apaches of Camp Apache, in Arizona.....1,878	

* Contradictory statements and apparently misapprehension as to the names and present status of the Southern Pacific Coast Dénés render an exact classification of them difficult. Thus Mr. Horatio Hale (*Language as a Test of Mental Capacity*, p. 85, 1891) speaks of the Kwalhiokwas as still lingering in one of the Pacific States, while Dr. A. S. Gatschet, in his work on "The Klamath Indians of Southern Oregon, Vol. I. p. 45," published one year *earlier*, states that they have disappeared together with the Tlatskanai, another Déné tribe. The same ethnographer mentions side by side (*op. cit.*) with the Hupas the Wailáki, reference to whom I find in no other author. The Totunies are called Totutunies by H. Hale (*op. cit.*), Tututenas by Dr. Brinton (*op. cit.*), Tootoonas by Mr. Morgan (*60th Ann. Rep.*), Tutatamy by P. de Lucy-Fossarien (*Extrait du Compte Rendu stènographique du Congrès international des sciences ethnographiques ....Etude de philologie ethnographique par M. P. de Lucy-Fossarien, Paris, 1881*).

† After Prof. O. Mason (*The Ray Collection from Hupa Reservation*, pp. 206, 207).

‡ According to Horatio Hale (*Language as a Test, &c.*, p. 90), that tribe was erroneously thought to number in 1889 as many as 21,000 members.

§ These are not all pure Dénés, many being mixed with the neighboring tribes, or even altogether aliens as to the race to which they belong.

In Mexico, the number of Apaches is doubtful, since, according to Dr. D. G. Brinton, "although the Mexican census of 1880 puts the Mexican Apaches at 10,000, no such numbers can be located."* The same author then goes on to state on the strength of information emanating from Mr. Henshaw, of the Smithsonian Institution, that "the only Apache band now known to be in Mexico are the Janos or Janeros in Chihuahua, made up of Lipans and Mescaleros.†

6. The Lipans, in New Mexico, who have dwindled down to forty individuals. Their original home appears to have been on the Rio Grande.‡

It would not be pleasant to be represented as playing the role of the carping critic. Yet even the fear of appearing to merit this uncomplimentary epithet, cannot deter me from pointing out how utterly meagre and unreliable are the data possessed, even at the present time, by the best ethnographers relatively to the Déné stock. Despite the correct list of the Northern tribes given by the writer in the last volume of the "Proceedings Canadian Institute," I find that Dr. D. G. Brinton in his recent book "The American Race," published at Washington two years after the aforesaid classification had been printed in Toronto, omits no less than six Déné tribes of the great northern division. To show how utterly mixed ethnography appears to be when it is a question of locating the various Déné tribes, and thereby to excuse the details into which I find myself obliged to enter, I take the liberty of quoting the following sentences from the above mentioned work :—

"These [the Dénés] extend interruptedly from the Arctic Sea to the borders of Durango, in Mexico, and from Hudson Bay to the Pacific. . . The Loucheux have reached the mouth of the Mackenzie River, the Kuchin are along the Yukon, the Kenai on the Ocean about the peninsula that bears their name, while the Nehaunies, Sekanies and Takullies are among the mountains to the south. The Sarcees lived about the southern head waters of the Saskatchewan." §

Now, with all the deference due to such a veteran ethnographer as Dr. Brinton, truth bids me state that :—First, It is almost absolutely certain that no branch of the Déné family is stationed on the Arctic Sea, the whole coast of which is occupied by Eskimo tribes. Second, There

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* "The American Race," p. 69, Washington, 1891.

† *Ibid.*

‡ *The Karankawa Indians*, etc., by A. S. Gatschet ; Cambridge, Mass., 1891.

§ The American Race, pp. 68, 69.

are no Dénés on the Hudson Bay any more than on the Pacific. The former is peopled on the north by the Eskimos and on the south by tribes of Algonquian parentage, while several alien races cover the whole northern coast of the latter, with, perhaps, a single insignificant exception.* Third, The Loucheux and the Kuchin are one and the same tribe under different names, the first being that originally applied to it by the French-Canadian voyageurs, while the second (which should read Ku-tchin or Ku-t'qin, the last syllable being *exploded* with the tongue and teeth) is more in honour among English-speaking ethnographers. The latter vocable is the exact equivalent of the Carrier "hwo'ten", the Tsé'kéhne "hwot'qen", the TsiɁKoh'tin "kwo'tin", all of which, as we have already seen, signify "Inhabitants." Fourth, The Kenai spoken of by Dr. Brinton are probably the K'naia-Kho-tana of Dr. Powell and both authors may be right in placing their habitat on the Pacific Ocean. Yet it must be admitted that this would be more evident, were not Dr. Brinton to transport it, ten pages further on, among the immense plains claimed by the Blackfeet as their ancestral home.† 5th, The would-be Nehaunees, Sekaunies and Takullies call themselves Nah'ane, Tsé'kéhne and TaKeɁne respectively. 6th, The Sarcees *now live* about the southern head waters of the Saskatchewan, but formerly *lived* some degrees further north among the Beaver Indians with whom they are congenerous, even as a subdivision of the Tsé'kéhne tribe.

Nothing but a desire of serving the interests of ethnological science has prompted the above remarks. That I can prove all I advance will not be doubted by those who are cognizant of the opportunities I enjoy of ascertaining the real ethnologic status of the tribes by which I am surrounded or of those which are so closely related by blood and language with that among which I now live. The inaccuracies which they are aimed at correcting must also be my excuse for venturing to present below the list, as complete as I can make it, of all the Déné tribes. A very few of the southern tribes may be unwittingly omitted; but I would rather sin by omission than by exaggeration. All the northern tribes

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* This is the *K'naia-Kho-tana* who are now said to reach the coast on Cook's Inlet (Dr. Powell's "Indian Linguistic Families," 7th Ann. Rep. Bur. Ethnol.). But the fact that this learned ethnographer associates thereto the "Ahthena" of Copper River renders the identification of that tribe somewhat doubtful, inasmuch as the "Ahtena," unless they are misnamed must be exogenous to the Déné stock, since that very name means in Déné "foreigners," and is used by our aborigines to designate all Indians of non-Déné stock. K'naia-Kho-tana, however, seems to have the right linguistic ring about it, and apparently refers to the "people of the river K'naia," whatever this last noun may mean.

† "Their [the Blackfeet] bands include the Blood *or K'enai* and the Piegan Indians" p. 79. The italics are mine.

are given without an exception, though I do not detail the ramifications or subdivisions of the Loucheux, and therefore omit any mention of the Kenai or K'naia-Kho-tana. The figures represent the population of each tribal division. In the case of the southern tribes they are compiled from the latest official accounts available. For the north-eastern divisions they are those of Rev. E. Petitot corrected down to date by Mr. Rod. Macfarlane, an H. B. Co's officer who has passed over 40 years of his life among the Indians he enumerates. I am myself responsible for the figures representing the numbers of the north-western tribes.

CLASSIFICATION OF THE DÉNÉ TRIBES.

NORTHERN DÉNÉS.

	About
Loucheux: Lower Mackenzie River and Alaska	4,400
Hares: Mackenzie, Anderson and MacFarlane Rivers	600
Bad-People: Old Fort Halkett	200
Slaves: west of Great Slave Lake and McKenzie River	1,000
Dog-Ribs: between Great Slave Lake and Great Bear Lake	1,000
Yellow-Knives: north-east of Great Slave Lake	500
Cariboo-Eaters: east of Lake Athabaska	1,200
Chippewayans: Lake Athabaska, etc.	3,000
Tsé'kéhne: both sides of Rocky Mountains	500
Beavers: south side of Peace River	700
Sarcees: east of Rocky Mountains, 51° lat. north and south	100
Nah'ane: Stickeen River and east	700
Carriers: Stuart's Lake, north and south	1,600
Tsiɣoh'tin: Chilcotin River	460

SOUTHERN DÉNÉS.

Umkwas, Totunies and (?) Kwalhiokwas: Oregon	150
Hupas: Hupa Valley, California	492
Wailákis: Northern California	(?) 130
Navajos: Arizona	16,102
Apaches: Oklahoma, Colorado, New Mexico and Arizona	5,702
Lipans: New Mexico	40
Total of the Northern Tribes	15,960
Total of the Southern Tribes*	22,616
Total of the whole nation*	38,576

* Exclusive of the problematic Kwalhiokwas, the Umkwas of the Siletz Agency, the Mexican Apaches, or any such bands as are not controlled, even remotely, by the office of the U. S. Commissioner Indian Affairs.

A tribe of Atnas, Adenas, Atnahs or Ahthenas, whose habitat would be the extreme north-west of this continent, is occasionally mentioned in ethnographic literature as belonging to the great Déné family. Pilling gives it a place in his "Bibliography of the Athapaskan Languages." There must be here a mistake either of name or of identification. "Atna," etc., is a Déné word which means "foreigner, heterogener," and is used to qualify *all* aboriginal races which are *not* Déné. Either then the Atnas of the travellers and ethnographers are not Déné, or if they belong to that race they must be misnamed.

Main Characteristics of the Déné Race.

If there is in the broad world a family of human beings which, though a mere subdivision of a larger group of the genus *homo*, plainly demonstrates, through the diversity of its many branches, the fallibility as ethnic criteria of all but one of the various sciences which go to make up Ethnology, this is most certainly the Déné family. Savants now-a-days seem too prone to study man as they would a mere animal. Perhaps they overlook too easily the fact that he is a rational being. If a part of the animal kingdom, he is there a king without peer; and to judge him after the same standard as we do the brutes of creation should be considered unscientific. We hear constantly of bodily measurements, of anthropometry and craniology. Now, without entering into the technicalities of these sciences, let us apply their test, I do not say to those portions of the Déné people which live thousands of miles apart, but to a few coterminous tribes of that nation.

On the Western slope of the Rocky Mountains live side by side three tribes, the Tsé-'kéhne, the Carriers and the Tsiɬ-Koh-'tin, which may furnish us with convenient material to experiment upon.

The Tsé'kéhne are slender and bony, in stature rather below the average, with a narrow forehead, hollow cheeks, prominent cheek bones, small eyes deeply sunk in their orbit, the upper lip very thin, and the lower somewhat protruding, the chin very small and the nose straight. Go and inspect them, and perhaps out of every ten men, five who have long been fathers will appear to you like mere children. I have never seen but one fat person among them and none that was bald.

Now the Carriers are tall and stout without, as a rule, being too corpulent. The men, especially, average 1^{m}, 660^{mm} in height. Their forehead is much broader than that of the Tsé'kéhne, and less receding than is usual with American aborigines. Their face is full, with a nose generally aquiline and in every case better formed than that of their heterogeneous neighbours; their lips are thicker and their chin more prominent than

those of the Tsé'kéhne. Their eyes are also much larger and of a very deep black. Baldness, though rare, is sometimes noticed among them, while a few are literally obese. I am very much mistaken if two crania, one of an individual of each of these tribes, would not be pronounced by a craniologist as belonging to representatives of diametrically different races.

The Tsi|Koh'tin, on the other hand, are short in stature, broad faced and broad shouldered, with prominent cheek bones, heavy jaws and a nose which is not uncommonly thick and flattish. They may be said to have some physical resemblance to the Chinese. This description applies also to the Babines, who might be considered as a branch of the Carriers.

The only points in common between the three tribes are the dark eyes, the black, coarse and straight hair and the small hands and feet. Large hands and feet, however, are occasionally met with among Carrier men.* I do not speak of the complexion, because it varies even in the same tribe according to the occupation and food of the natives. A hunter will never return from a tour of two or three months in the woods without being considerably bronzed, while his fellow tribesman who has remained at home, without being as white as a European, will yet be fairer complexioned than most individuals of the Salish race of the South. Even in the matter of beard, a notable difference is observable, inasmuch as full beards, dark and coarse, heavy with hardly any shaving, are by no means rare among the Babine sub-tribe, while the rest of the Western Dénés are remarkable for the scarcity, or sometimes the total absence, of facial hair.

If we now consider the Déné nation from a psychological standpoint, the contrast between its divers branches will be still more startling. The Northern Dénés are generally pusillanimous, timid and cowardly. Now, can this be said of the Apaches? The Northern Dénés are moreover lazy, without skill or any artistic disposition. Is it so with the Navajos? Even among our Carriers, the proudest and most progressive of all the Western tribes, hardly any summer passes off but some party runs home panic stricken, and why? They have heard, at some little distance, some "men of the woods" evidently animated by murderous designs, and have barely escaped with their lives. Thereupon great commotion and tumult in the camp. Immediately everybody is charitably warned not to venture alone in the forest, and after sunset every door is

* I have also seen several really fair-haired Carriers, a peculiarity which is so much the more remarkable as it certainly can not be ascribed to blood mixture with persons of Caucasian descent.

carefully locked against any possible intruder. Compare these puerile fears of the Carriers with the indomitable spirit, the warlike disposition of the "terrible Apache." Compare also the rude, unartistic implements, the primitive industries of the same tribes with the products of the Navajo ingenuity, their celebrated blankets and exquisite silverwork especially-and tell me if in this case psychology is a safe criterion of ethnologic certitude.

A noteworthy quality of the Northern Dénés, especially of such as have remained untouched by modern civilization is their great honesty. Among the Tsé'kéhne, a trader will sometimes go on a trapping expedition leaving his store unlocked, without fear of any of its contents going amiss. Meanwhile a native may call in his absence, help himself to as much powder and shot or any other item as he may need; but he will never fail to leave there an exact equivalent in furs. Now compare this naive honesty with the moral code in vogue among the Apaches. Read also what is said of the Lipans, another offshoot of the Déné stock: they "live in the Santa Rosa mountains from which they stroll about making inroads in the vicinity to steal horses and cattle."*

With regard to mental attainments and force of character, I have shown in a paper read before the Royal Society of Canada,† that all the north-western tribes, Nah'ane Carriers and Tsi|Koh'tin, which have come into contact with alien races have adopted the most prominent practices and customs of the latter. Such is, to a great extent, the case even as regards mythology. Nay more: they have gone as far as to borrow the language of their neighbours in connection with their traditional songs and ceremonies. On the other hand, many Tsi|Koh'tin and not a few Babines speak Shushwap or Kitikson, while not one full blood individual of the two latter stocks has acquired enough of the Déné languages to decently hold conversation through them. The Dénés think it a mark of enlightenment to imitate the alien races with which they have intercourse, while these show the little esteem they profess for them by calling them "stick savages."

Now hear what a competent authority says of the Dénés of North California: "Next after the Karoks, they are the finest race in all that region, and they even excel them in their statecraft, and in the singular influence, or perhaps brute force, which they exercise over the vicinal tribes. They are the Romans of North California in their valour and in their far-reaching dominions. They are the French in the extended

* The Karaukwa Indians, by A. S. Gatschet, p. 41; 1891.

† Are the Carrier Sociology and Mythology Indigenous, etc? Trans. R. S. C. Sec. II, 1892.

diffusion of their language. They hold in a state of semi-vassalage most of the tribes around them, exacting from them annual tribute in the shape of shell-money; and they compel all their tributaries to speak Hupâ in communication with them. Although most of these tributaries had their own tongues originally, so vigorously were they put to school in the language of their masters, that most of their vocabularies were sapped and reduced to bald categories of names."*

The Northern Dénés, who are eminently gentle in disposition, have generally shown a remarkable receptiveness. And this explains how it is that, with few exceptions, they are all to-day practical Christians, and conform to the customs of the whites as much as their social status will permit. In opposition to this, we find that the Navajos and the Apaches still hold to their superstitious beliefs and ceremonies, and keep themselves aloof of any civilizing influence. This is so true that when, some years ago, an effort was made by the U. S. Commissioner of Indian Affairs to secure a tract of land close by the Cherokees' territory for the location of the Navajos, the former who, as is well known, have made great strides towards civilization, refused to entertain the proposition, "asserting that the Navajos were not civilized Indians."† I have never noticed any mention of real improvement in their midst since that time.

As for the Hupas, their agent stated ten years ago that they "are not to-day any more enlightened, advanced, progressive, industrious or better off in any way than they were when the Reservation was established, about twenty years ago."‡ That time has brought no change in their dispositions is made clear by the following words of their agent in his latest Report (1891): "They all cling to their own customs and laws as being far better than any others, and seem to look upon many of them as sacred. . . . Many of the Indians seem to look upon the attendance of their children [at school] as a favour to the teacher or the agent, and expect some reward for it."§ In strong contrast to the indifference for intellectual attainments manifested by the Hupas, let me refer the reader to what I said in a former essay‖ of the craving for knowledge evidenced by our Carriers, and the remarkable results it has produced even under the most untoward circumstances.

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* Contributions to North American Ethnology, vol. iii., p. 72.

† The Cherokee Nation of Indians, by Ch. C. Royce, Fifth Annual Report, Bureau of Ethnology, Washington, 1883-84.

‡ Indian Affairs Report, 1881, 6; *apud* O. E. Mason's The Ray Collection, p. 207.

§ Sixtieth Annual Report Commissioner Indian Affairs, 1891, vol. 1, p. 220.

‖ The Western Dénés; Proc. Can. Inst., vol. vii., p. 165.

Again, the folk-lore of the North-Western Dénés greatly differs from that of their immediate Eastern neighbours and congeners, while there is no point of affinity between that of either divisions and the mythology of the Navajos.

How is it then that tribes of aborigines occupying so widely separated territories and so utterly dissimilar from a psychological, technological, sociological and mythological standpoint can be classed under one single denomination as Dénés? The answer is in every mouth: this is owing to linguistic analogy. Language, therefore, is the *trait-d'union* which unites into one homogeneous body such apparently heterogeneous elements. Through it we are certain that the same blood flows in their veins, and that they are the children of a common father, whoever he may have been. If any stronger argument can be adduced in support of the paramount importance of Philology as an ethnological criterion, I am at a loss to discover what it can be.

Hence it will be seen that my initial remarks concerning that class of modern scientists who lay so much stress on the physical structure of man to the detriment of his special characteristic as a distinct genus, thinking and speaking, were not unwarranted. If even the *ensemble* of the peculiarities which differentiate him into a rational, social being cannot lawfully claim the first place in the ethnologist's estimation, *a fortiori* this cannot be granted to those features which he possesses in common with non-human animals. In the words of Horatio Hale, "the grand characteristic which distinguishes man from all mundane beings is articulate speech. It is language alone which entitles anthropology to its claim to be deemed a distinct department of science."* One needs not be a scientist to see the correctness of this view, and it is a long time since Quintilian said: "When the Creator distinguished us from the animals it was especially by the gift of language.... Reason is our portion, and seems to associate us with the immortals; but how weak would reason be without the faculty to express our thoughts by words, which faithfully interpret them! This the animals want, and this is worth more than the intelligence of which, we must say, they are absolutely deprived." †

I have not so far been fortunate enough to come across any vocabulary of a southern Déné dialect, and the only continuous Navajo texts I have ever seen are those of the "Mountain Chant" published by Dr. W.

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* Language as a Test of Mental Capacity, by H. Hale; Transact. R.S.C., Vol. IX., p. 77, 1891.

† Quintilian, translated by La Harpe, Dijon, 1820.

Matthews.* Now, clothing these texts with the orthography denotive of the peculiarly exploding and sibilant sounds, which I think they must receive to become correct renderings, I find side by side, with some terms proper to the tribe or borrowed from adjacent stocks, no less than seventy-two words which are easily recognizable here, at a distance of perhaps 2,000 miles from the nearest Navajo. To form a just idea of the proportion of genuine Déné with local or foreign words, it should be borne in mind that these texts are composed merely of a few words very often repeated.

DISTRIBUTION OF THE WESTERN DÉNÉS.

Now that we have made some acquaintance with the divisions and main traits of the Déné nation in general, we may particularize and furnish the reader with more precise ethnologic data concerning the tribes whose technology and industries we are about to review. These we have already named: they are the Tsiɬkoh'tin, The Carriers and the Tsé'kéhne. As some savants have done me the honour of asking for more detailed information on their ethnographic status than were contained in a former paper on the same, I shall now proceed to give their tribal subdivisions or septs, together with their aboriginal names, the habitat of the natives thereby determined and, as far as practicable, their present population, and the number of their villages.

West of the Rocky Mountains we have from south to north :—

The *Tsiɬkoh'tin*, who actually inhabit the Chilcotin valley and roam over the bunch grass covered plateaus that skirt it on either side, from the 50° to the 52° 30′ of latitude north. Their territory is bordered in the east by the Fraser River, and in the west by the Cascade Range of mountains. But not unfrequently a few bands manage to cross over and make inroads for hunting purposes into the territory of the Sishaɬ and other coast tribes. Of course the latter resent these encroachments upon their ancestral domains; but as hunting for peltries is not extensively practised by them, the harm done by the poachers is not very great.

It is perhaps worth remarking in this connection that the "Linguistic Map of British Columbia" prefixed to Dr. F. Boas' Report on the B. C. tribes for 1890† is somewhat inaccurate in that it gives the Tsiɬkoh'tin quite a tract of land on the east side of the Fraser which, as a matter of fact, is now and has been occupied from time immemorial by three villages of Shushwap Indians, viz.: Soda-Creek, Sugar-Cane and Alkali-

* Fifth Ann. Rep. Bureau of Ethnology, 1883-84.

† Sixth Report on the N. W. Tribes of Canada, London, 1890.

Lake. Nay more, until recently the Tsi|Koh'tin did not even extend as far as the Fraser. Some 25 years ago the bulk of the tribe inhabited Na'kûnt'|ûn, a village on the lake of that name (52° 40′ lat. by 125° 5′ long.) close by the Bilqulas' territory, whence they migrated almost in a body to the more fertile lands they now occupy.*

From a sociological standpoint they might be divided into the quasi-sedentary and the nomadic Tsi|Koh'tin. The former dwell on the north banks of the Tsi|Koh, called by the whites Chilcotin River. They are divided into two groups, viz.: the *Tɬəs-Koh-'tin* (people of the Splint River) with one village on that creek close by the Fraser, population about 75; and the *T'ɬâ-theñ-Koh-'tin* (people of the river that trails through the grass) who have two villages near the Chilcotin 35 and 45 miles respectively west of the Fraser. Total population 190. An independent band of some 35 individuals, an offshoot of the same sub-division, has established itself near the Fraser facing Fort Alexander.

All of these Tsi|Koh'tin have abandoned their original semi-subterranean huts to dwell in log houses covered with mud according to the fashion prevailing among the neighbouring whites. They also cultivate wheat and other cereals, peas and potatoes with moderate success.

The nomadic Tsi|Koh'tin are called by the whites "Stone Tsi|Koh'tin" by allusion to their favourite haunts, the rocky spurs of the Lillooet mountains and of the Cascade range where they live, largely on marmots. They have no fixed abode and except during the winter, they are constantly shifting from their southern to their northern borders, that is from the aforesaid mountains to the Chilcotin River, where they generally pass a few weeks of the fair season. I know of no more primitive people throughout the whole of British Columbia.

Apart from the above regular subdivisions their still remain at Na'kûnt'|ûn, or in the proximity of that lake, a few straggling members of the same tribe.

In his late paper on "the Shushwap people of British Columbia," Dr. G. M. Dawson gives† after Mr. J. W. Mackay, Indian agent, an interesting account of a hostile excursion of Tsi|Koh'tin warriors into the country of

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* Were native testimony regarded as an insufficient proof of this, philology might still furnish us with corroborative evidence of unquestionable character. Thus the most remarkable feature of the present territory of the Tsi|Koh'tin tribe is its magnificent bunch grass (*Agropyrum* [*Triticum*] *repens* L.). Now they call it *Œnna-t'ɬâ*, or "grass of the foreigners," *i.e.*, the Shushwap. This particular species of grass is not met with north of the valley and borderiug tablelands of the Chilcotin River.

† Notes on the Shushwap people of B. C.; Transact. R. S. C. Sec. II, p. 24, 1891.

the Shushwap. On the authority of that narrative, the would-be invaders were pushed back by superior numbers into the Semilkameen valley where, by their prowess, they compelled their pursuers to come to terms and make a treaty of peace from which intermarriages soon resulted. "These strangers, who are said to have come from the Chilcotin country, are thus the earliest inhabitants of the Semilkameen valley of whom any account has been obtained."* Seven, out of thirteen words given by Mr. Mackay, as remnants of the original language of the invaders, are undoubtedly Tsi[Koh'tin, and make it certain that the Semilkameen Shushwap are partly of Déné parentage.

Immediately north of the Tsi[Koh'tin we find the Carriers or *Takheɳe*, the most important in numbers, most widespread and progressive of all the north-western Déné tribes. They extend as far north as the 56° of latitude and are coterminous with the coast tribes on the west and the Crees and Tsé'kéhne on the east. The Coast Range on the one side and the Rocky Mountains as far as 53° lat. on the other, separate them from their heterogeneous neighbours. North of the 53°, they are in immediate contact with the Tsé'kéhne.

The Carriers are semi-sedentary Indians. They have fixed homes in regularly organized villages from which they periodically scatter away in search of the fish and fur-bearing animals on which they subsist. From south to north, their tribal subdivisions are:—

1. The ⌐thau'tenne (a contraction of ⌐tha-koh-'tenne, people of the Fraser River). They now have but one village, Stella (the Cape) contiguous to the old Fort Alexander, formerly one of the most important of the H. B. Co's. posts in British Columbia, now abandoned. They were originally several hundreds: they are now almost extinct as a sept. Whiskey and loose morals owing to the vicinity of the whites are responsible for this result. They are co-terminous with the Shushwap in the south and the Tsi[Koh'tin in the immediate west. I do not think that fifteen individuals of that sept now remain.

2. The *Nazku'tenne* (people of the river *Naz*). They are likewise greatly reduced in numbers, there not being actually more than 90 members of that sub-tribe, though they still inhabit two villages Quesnel and Black-Water.† The same causes, especially the former, as played havoc among the ⌐thau'tenne, are slowly but surely working out the

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* *Ibid.* p. 25.

† The Black-Water or West River followed up by Sir. A. Mackenzie to reach the Pacific Coast.

ultimate destruction of the Nazku'tenne. Both villages inhabited by them are on the Fraser River.

3. Due west of the Black-Water village and ascending the river of that name to its source, we meet with a third subdivision of the Carriers, the *Nu-tca-'tenne* (probably corrupted from *Nu-tcah-'tenne*, people down against the island). These people dwell in four small villages, Trout Lake, ⅂us'kəz,* Pe-ɭ'ka-tcék,† and ⅂'ka-tco.‡ The latter is composed of a mixed population of Déné and Belqula descent whose first white visitor was the writer, ten years ago. The Nu-cha-'tenne formerly had several other villages (Tsitsi, ⅂rak, etc.), the sites of which are still discernible through small clearings in the forest. Their present total number may be a little over 135.

4. Immediately north of the Black-Water village, at the confluence of the NutcaKoh with the Fraser River, we have one vllage, Fort George or *⅂eitli*,§ the population of which forms one separate sept, the *Tano-'tenne* (people a little to the north). It numbers actually 130 persons. The Fort George Indians have on the east side of the Fraser very large and productive hunting grounds as far as, and comprising, the Rocky and Caribou mountains and spurs thereof. A village of the same sept, Tcinlak at the junction of the Na'kralKoh or Stuart's Lake River with the NuchaKoh had formerly a flourishing population which was, not very long ago, practically annihilated in one night by the TsiɭKoh'tin.

5. Two villages on Fraser Lake furnish us with our fifth tribal subdivision of the Carriers. Their population goes under the common name of *Natlo'tenne* (contracted from *Natleh-hwo'tenne* or people of Natleh.‖) About 135 persons form the population of their two villages Natleh and Stella,** one at each end of the lake.

The aggregate of the above enumerated septs constitutes what I generally designate under the collective name of Lower Carriers. Though slight linguistic peculiarities give to each of them a real individuality, yet the dialect of all contains very important characteristics common to the whole aggregate which differentiate it from that of any of the septs or subtribes which remain to review.

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* "Half-⅂us," the name of a carp-like fish.

† "Wherewith one catches fat."

‡ "The Big-fattening."

§ "The Junction."

‖ "It (i.e., the salmon) comes back again."

** The Cape.

Under the name of Upper Carriers I include :—

6. The *Na-'kra-ztli-'tenne* or people of Na'kraztli * Stuart's Lake They inhabit two villages, Na'kraztli and Pintce† on the southern end, and on the middle of Stuart's Lake. They number 180 souls, and they are of all the Carriers those who have made the greatest strides towards civilization.

7. Immediately to the north-west, on the same lake and its tributaries, Lakes Tremblay, That'ɬah, ‡ and Connolly, a second subdivision of the Upper Carriers, the seventh of the whole tribe, occupies four smal villages, two only of which are regularly organized with a chief and the usual native officers. These are Tha-tce, ‖ and Sas-thût§ respectively at the confluence of Thatce river on Stuart's Lake and near Fort Connolly on the lake of that name. The others are 'Kəztce ** formerly an important locality on Thatce river and Yə-Ku-tce †† at the north-western extremity of Stuart's Lake. The original home of all these bands was at the end of that lake, as is manifest from their common name as a sept: *T'ɬaz-'tenne*, people of the bottom or end of the lake. Their total population is not over 90.

Some nine or ten years ago, Drs. Tolmie and Dawson published conjointly a valuable ethnological map of this province, ‡‡ which does not tally in every respect with my description of the northern limits of the Carriers' territory. The line of demarcation between the Carriers and the Tsé'kéhnes' hunting grounds passes, on that map, through the middle of Thatlah lake, giving the latter a large strip of land wkich I grant to the former. I must explain that the authors of that map thereby point to the *de jure* or original territory of the Carriers, while I sketch above the *de facto* or actual limits thereof. By right Bear's or Connolly lake and adjacent country belong to the Tsé'kéhne tribe ; but, as a matter of fact, the village which is situated close to the H. B. Co's. fort is now the

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* For the etymology of this name, see "The Déné Languages," Trans. Can. Inst. 1889-90, p. 188.

† Confluence of the *Pin* river.

‡ "Bottom of the water," the equivalent of the French "Fond du Lac." The real native name of this lake is *Rèl-rə-pən*, *lit*, "*burden-near-lake.*"

‖ "The tail," (i.e., confluence in the lake) of the water.

§ "Black Bear bathing place."

** Confluence of the *'Kəz* river.

†† The confluence of the river *YəKuztli*, (the outlet of *YaKo* lake).

‡‡ Appended to "Comparative Vocabularies of the Indian tribes of B. C. ; Montreal, 1884.

rendezvous of representatives of three different tribes, namely : the Tsé'kéhne who periodically congregate there for trading purposes and have no permanent residence ; the Carriers, a band of whom now inhabit the village and hunt in the vicinity of the lake with the consent of the former ; and the ꟻtnas or Kitiksons from the Skeena river who are considered as mere intruders and as such live there only on sufferance.

Both the Na'kraztli'tenne and the T'ɹaz'tenne receive from the Babines the name of 'Kutəne.

The following subdivisions might be designated under the collective name of Babines, since in language they are practically one, and the custom of wearing labrets which gave its distinctive name to one of them was common to both. They are :—

8. The *Nitu'tinni* (in Upper Carrier *Nato'tenne*) or Babines who inhabit the northern half of Babine lake in three villages and number actually some 310 souls.

9 The *Hwotsu'tinni* (in Upper Carrier *Hwotso'tenne*) or people of the river Hwotsutsən.* They are called *Akwilgét*, "well dressed," by the Kiliktons, their immediate neighbours of Tsimpsian parentage, and after them by the whites. They inhabit two villages, Tsé-tcah,† KéyəR-hwotqət,‡ and two smaller places now organizing, Tseɹ-'kaz-Kwoh,§ and Moricetown on the HwotsotsənKwoh or Buckley river and what is known in the country as the telegraph trail. All of these localities are within the northernmost extremity of these Indians' hunting grounds which extend from Français Lake up to the Skeena River. Several members of that sept are allied by blood with their alien neighbours, the Kitiksons. They number about 300.

The language of these different branches of the Carrier tribe, while remaining essentially the same, undergoes however marked variations corresponding to its ethnographical subdivisions. Upon that ground I have even sometimes asked myself whether distinct individuality as a tribe should not be granted to the Babines whose linguistic or even psychological peculiarities are so glaring that they cannot escape detection even by the most careless observer. Much of their dialect would indeed be "greek" to an ꟻthau'ten visitor.

It is also but right to warn the reader that the three main divisions of the tribe into Lower Carriers, Upper Carriers and Babines, although

* Almost equivalent to "Spider."

† Down against the Rock.

‡ Old Village.

§ River of the axe edge.

founded on language and geographical distribution, are not recognized by the Carriers themselves, who know of no other than the above enumerated minor subdivisions.

The Tsi|Koh'tin and Carriers have a well organized society composed of the hereditary "noblemen" who own the land, and the common people who hunt with and for them. They formerly had no local head-chiefs. Moreover, irrespective of the ethnographic divisions based on language and habitat, they are divided into several gentes the members of which believe themselves bound by ties of the strictest relationship. They were originally exogamous, and throughout the entire Carrier tribe matriarchate or mother-right is the law governing succession to titles and property.

Among the *Tsé-'kéh-ne*, or "People-on-the-Rocks" a simpler and more primitive social organization obtains. That tribe, through necessity as much as from natural inclination, is entirely nomadic. As salmon is unknown throughout their territory, these aborigines have to be almost constantly on the move after the moose, cariboo and other large animals on whose flesh they mainly subsist. Father-right is their national fundamental law, and the whole tribe is composed of bands slightly differing in language, and with no regular chiefs. In fact, their society, such as it is, might almost be termed a perfect anarchy, were it not that the advice of the oldest or most influential of each band is generally followed as far at least as regards hunting, travelling and camping.

Though each band has traditional hunting grounds, the limits of these are but vaguely defined, which is not the case with those of the Carriers. Furthermore, several members of one band will not unfrequently be found hunting unmolested on the land of another. Therefore no very strict boundaries can be assigned to the following tribal subdivisions which comprise all the Tsé'kéhne population within the political borders of British Columbia :—

1. The *Yû-tsû-t'qenne*, or "people down over there" (*i. e.*, in the direction of an expanse of water) are the band which from time immemorial bartered out to the Carriers the axes and other primitive implements of which due mention shall be made further on. They are so called by the rest of the tribe by allusion to their commercial relations with the Carriers of Stuart's Lake. Their hunting grounds lie from Salmon River * to MacLeod's Lake and thence to the Fraser, by 53° 30'.

2. The *Tsé-'kéh-ne-az*, or "little-people-on-the-rocks" roam over the

* There are so many Salmon rivers in the north of British Columbia that it may be necessary to explain that the one here mentioned empties itself into the Fraser a little above Fort George.

land which extends between the latter lake and the summit of the Rocky Mountains. They are often to be found hunting on the western slope of that range.

3. The *To-ta-t'qenne* (" people-a-little-down-the-river ") inhabit the eastern slope and adjacent plains of the Rocky Mountains within British Columbia.

4. The *Tsa-t'qenne* (who call themselves *Tsa-huh*) or Beaver-people, roam over the large prairies contiguous to the Peace River, on the south side of that stream and east of the Rockies.

5. The *Tsé-'ta-ut'qenne* (the people against the Rocks) as hinted by their name, have their habitat chiefly at the base of the Rocky Mountains on the north side of the Peace River.

6. This is perhaps the proper place to mention the *Sarcees*,* who have been adopted by the Blackfeet Confederation, and actually live east of the Rocky Mountains by about 51° lat. north.

7. To the north of all the above sub-divisions, from the 56° to the north, we find the *Sas-chût-'qenne* or "people of the Black Bear" whose trading post was until last year Fort Connolly on the lake of that name.

8. Another band called *Otzən-ne* (people between or intermediary) claims the land which intervenes between the territory of the Saschut-'qenne and that of the Tsélohne on the west side of the Rocky Mountains.

9. Those *Tsé-loh-ne* (people of the end of the Rocks) live immediately north of the latter and their chief trading post is now B. L. O. (Bear-Lake-Outpost) on the Finlay River by 57° of latitude north. Their name is due to the fact that their habitat is an immense plain which is said to intersect the whole of the Rocky Mountains which are popularly believed not to extend any further.

The aggregate population of all these bands does not exceed 1,300.

The *Tsé'kèhne* are known to the Carriers under the name of *T'tat-'tenne* or " people of the beaver-dams," while the latter are responsible for the distinctive name of the Carriers—*Areŋe*, " packers." The nickname *Ta-Keŋ-ne* by which this tribe sometimes calls itself † is of recent origin It has no meaning in its language to which it is exotic, and I cannot

* Their aboriginal name as a sept is unknown to me. A century ago they had 35 tents with a population of 120. (History of Manitoba, p. 85).

† Indeed they even call thus all the races of Indians by opposition to the whites.

imagine whence it originated. It is the would-be *Tacullies* or *Takullies* of the ethnographers.*

The foregoing information will be found recapitulated in the following list showing the tribal subdivisions from south to north of the Tsilkoh'tin, the Carriers and the Tsé'kéhne.

TSILKOH'TIN TRIBE.

Stone Tsiɻkoh'tin ; immediately south of Chilcotin River.
Tɻɔskoh'tin ; ten miles north of the mouth of Chilcotin River.
T'ɻotheñkoh'tin ; north bank of Chilcotin River, 45 miles from its mouth.
Independent septs ; Fort Alexander and Nakûntl'ûn.

CARRIER TRIBE.

Ɉthau'tenne ; Fort Alexander.
Nazku'tenne ; Quesnelle and mouth of Black Water River.
Nutca'tenne ; on Black Water and throughout its basin.
Ɉano'tenne ; Fort George.
Natlo'tenne ; Fraser Lake.
Na'kraztli'tenne ; Stuart's Lake.
T'ɻaz'tenne ; upper end of Stuart's Lake and tributaries.

BABINE SUBTRIBE.

Nétu'tinni ; Babine Lake.
Hwotsu'tinni ; Buckley River and Français Lake.

TSÉ'KÉHNE TRIBE.

Yûtsût'qenne ; from Salmon River to McLeod's Lake.
Tsé'kéhneaz ; from McLeod's Lakes to the Rocky Mountains.
Totat'qenne ; immediately east of Rocky Mountains.
Tsat'qenne (the Beavers); south side of Peace River.
Tsè'taut'qenne ; base of Rocky Mountains close by preceding.

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* The number of different orthographical readings of the names of the north-western Déné tribes is truly wonderful. Thus the Carriers (*Takɇne*, the "Porteurs" of the French Canadians) are called *Tahkali* and *Tahcully* by Anderson, *Teheili*, by Dawson and *Takully*, *Tacully*, *Takulli* by others. The Tsé'kéhne are *Thé-kka-nè* to Petitot, *Thekenneh* to Kennicott, and *Sicany*, *Siccani*, or *Sikani* to others. I am ashamed to own that I have myself countenanced in former papers the wrong reading "Sèkanais" of my predecessors here.

Sarcees; immediately east of Rocky Mountains, 51° lat. north.

Saschût'qenne; Connolly Lake and north. West side Rocky Mountains.

Otzənne; north of preceding, same side of mountains.

Tsèlohne; north of preceding, same side of mountains.

To the above I should add the *Nah'ane** whose hunting grounds lie to the north of those of the Tsé'kéhne. But I am not familiar enough with their tribal divisions to state them with any degree of certainty, nor do I sufficiently possess their technology to speak authoritatively of it. It may however be broadly stated that from an archæological standpoint the Western Nah'ane may be classed as Carriers, while the Eastern Nah'ane are to all practical purposes regular Tsé'kéhne.

* The so-called *Nehawni* of Pilling, the Na"ane of Petitot, the Nahâwney of Kennicott, the *Nehawney* of Ross and the *Nahawnies* of others.

CHAPTER II.

PRELIMINARIES—PHILOLOGICAL.

Even Philology is not without bearing on Archæology. More than once the former will prove a great help towards elucidating such problems as the relative age or history of the human products whose aggregate constitutes the *raison d' être* of the latter. Thus the necessaries of native life, those objects which are the most indispensable to savage man and whose appearance as technological items must therefore have been the earliest are, as a rule, expressed in Déné by monosyllabic roots as *thû*, water ; Kʷən, fire ; *jo*, fish ; *tsa*, beaver ; *'kra*, arrow ; *pij*, snare ; *kuh*, trap ; etc. Other objects or implements of more complex nature or less general import, or the use of which supposes higher steps in the industrial ladder, are rendered by polysyllabic words. In the language of the Dénés, the more primitive an object, philologically also the simpler its name. Implements of complicated structure or of recent introduction among the aborigines have almost invariably names of similarly composite fabric.

These considerations have led me to give, either in the text or through foot-notes, the aboriginal name of each item of native technology mentioned in the present monograph. As we shall presently see, some of these names admit of no literal translation ; but when such translation is possible, it shall accompany the Indian word. Unless otherwise noted, those names will be in the Carrier dialect.

That the reader may the more easily recognize the category to which such words etymologically belong, and thereby judge of the place the objects they represent occupy in the Déné technology, I deem it not irrelevant to reproduce here the following paragraphs from a former paper on the Déné languages.

"Considered in their material structure and etymology, the Déné nouns may be divided into four classes. These are the primary roots which are all monosyllabic as in Chinese. Such are *ya*, sky ; *thû*, water ; *tsé*, stone ; *s̄əs*, black bear ; etc. Theyare essentially nominative : they neither define nor describe the object they designate ; they merely differentiate it from another. I consider them as the remnants of the primitive Déné language, inasmuch as they are to be found with little or

no alteration in all the dialects of the family, whatever may be the distance intervening between the aborigines who speak them.*"

No etymology or other explanation than that of the text will be given of words belonging to this category, because they admit of none. Thus the context will indicate for instance that Rəɂ is a war club, that *we* is a kind of fish trap, etc., without any attempt being made at explaining the origin of either word, or at giving a more literal sense of them than that furnished by the translation, which would be impossible. They have no derivation, but on the contrary may serve as the compounding elements of other words of secondary import.

"The second category comprises roots of simple import which are genuine unsynthetical substantives though polysyllabic, generally dissyllabic, in form. To this category belong words as *təne*, man; *t'sèkhè*, woman; *pəñrən*, lake; etc. They possess, to a limited extent, the properties of the monosyllabic roots, being likewise merely determinative and oftentimes varying but little with the change of dialect."†

Here it may be added that even in these nouns there is generally one syllable which is more important and contains, as it were, the quintessence of the word. Thus it is with the *ne* of *təne*; the *t'sè* of *t'sèkhè*, the *pən* of *pəñrən*. In composite words, such syllables only are retained. So the Carriers will more commonly say *ne-əran* murderer, than *təne-əran*, while in such compounds as *ɂi-t'sè*, she-dog, and *pən-tco*, big lake, the weak or secondary syllable has also disappeared.

"The third class contains composite nouns formed, as a rule, by compounding, though sometimes by agglutinating, monosyllabic or dissyllabic roots. Such are *ne-na-pa-ra* (literally: man-eyes-edge-hair) eye lashes; *təpe-té*, wild sheep horns; *mai-ré*, vegetable oil instead of *mai-*Ré, literally, fruit-oil. These nouns being mere compounds of roots belonging to the two former categories have the same degree of relative immutableness with regard to the various dialects as the radicals which enter into their composition."‡

In like manner, implements designated by names of this category may be of as ancient origin as those denominated by words of the first.

Thus, *tsa-m-piɂ*, beaver snare, contains two ideas of simple import—the medial *m* being merely euphonical and demanded by the following *p*. That words of this class may not be confounded with terms of the preceding, their compounding roots will be separated by a hyphen.

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* The Déné Languages, etc. Transact Can. Inst. vol. I, 1889-90, p. 181.

† *Ibid.*

‡ *Ibid*, p. 182.

"The fourth and last class is made up of verbal nouns which, as their name indicates, are nothing else than verbs in the impersonal or personal moods employed to qualify objects of secondary import with the help sometimes of a radical noun, sometimes of a pronoun, and always of a prepositive particle prefixed to, or incorporated in, the verbal substantive. Of this description are the words *pe-yən-əl'qəl* (lit. with-earth-one cleaves), plough; *u-'kwət-'səzta* (lit. it-on-one sits), seat; *ə'ten-pa-yəR* (lit. work-for-house) work-shop."*

Very few of the objects or implements designated by words of that class can be regarded as of really ancient origin.

As for the orthography followed in the present monograph for rendering aboriginal words, it is as follows :—

The vowels have the continental sounds. When accentuated, they undergo the same phonetic changes as French letters do when affected by similar accents. Thus *â*, *î*, *ô*, have the same sound as in French; *e* and *u* as in Italian; *é* is sounded as the *e* of "mets", *è* as that of the English "ten", while *ə* corresponds to the so-called French *e muet* in such words as *je*, *te*, *le*. *W* is always a consonant.

Subject to the following remarks, the consonants have also the continental sounds. *H* is strongly aspirated; *ñ* represents a nasal *n* followed by a common or sounding *n*; *ʃ* is a lingualo-sibilant which is obtained by the emission of a hissing sound on both sides of the tongue curved upwards previous to its striking the lingual letter; *r* is the result of uvular vibrations, and when immediately following a guttural (*g*, *k*, *kh*, 'k, or K) it is almost impreceptible to the ear; K, and R, are respectively *k* and *r* pronounced with a very guttural inflection; *q* nearly resembles *ty*, both letters being simultaneously sounded; *c* represents the English double consonant *sh*. The apostrophe (') prefixed to *k*, *t*, *q*, adds to the regular pronunciation of those letters the exploding sound peculiar to most Indian languages. *s̄* is intermediate between *s* and *c*.

Th, *kh*, are equivalent to t+h and k+h and are produced by a single emission of voice. T's and t'ʃ are "exploded" and their exact value cannot be realized otherwise than by hearing them pronounced by a competent person.

The hiatus is represented by a period in the upper part of the line (·).

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* *Ibid., ibid.*

Works and Implements unknown among the Western Dénés.

Before attempting to detail what our aborigines have or had of archæological ware, it may not be amiss to enumerate what they do not have and apparently never had.

Throughout the whole extent of their territory, no mounds, enclosures, fortifications of a permanent character or any earthen works suggesting human agency are to be found, nor is their existence, past or present, even as much as suspected by any Carrier, Tsé'kéhne or Tsiɬkoh'tin. In the same manner, pottery, clay implements, perforated stones, mortars, ceremonial gorgets, gouges, stone sledges and articles of shell either plain, carved or engraved, have to this day remained unknown among them. They did formerly, and do still occasionally, use stone pestles. But for the mortars common among natives of most heterogeneous stocks, they substitute a dressed skin spread on the ground whereon they pound dried salmon, salmon vertebræ, bones, etc.

Such sweeping assertions may astonish those readers who have already been informed by Dr. D. G. Brinton that among the Dénés "utensils were of wood, horn or stone, though the Takully women manufactured a coarse pottery and also spun and wove yarn from the hair of the mountain goat."* This statement is quite a surprise to me, inasmuch as I supposed it was a fact well known to Americanists that no pottery of any description existed among such north-western stocks of aborigines as the Déné, the Tsimpsian, the Haida, the Kwakwintl, the Tlinget and the Eskimo. As for the spinning of the hair of the mountain goat Dr. Brinton probably confounds the Carriers (his Takully) with the Pacific Coast tribes which did and occasionally do make good blankets out of that material.†

I have also mentioned the mortars among articles unknown to the original Dénés. Therefore I must call attention to a statement of A. Niblack in his valuable monograph on "The Coast Indians of Southern Alaska" wherein he says: "These [mortars] were by some people supposed to indicate that in early days these Indians ground maize *as did and do the hunting Indians of the interior.*"‡ The italics are mine.

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* The American Race, p. 71.

† A gentleman speaking *de visu* states that "yarn is spun from the wool of the mountain goat (not the mountain sheep or big-horn) and is woven into excellent blankets which are highly coloured and ornamented." (Notes by Mr. J. C. Callbreath in G. M. Dawson's "Notes on the Indian tribes of the Yukon District" etc., reprint, p. 6). But this statement applies to the Thaɬthan division of the Nah'ane, not the Carrier tribe.

‡ The Coast Indians, etc., in Ann. Rep. of the U. S. National Museum, p. 281; 1890.

These words, coming from an author who is generally so well informed, are at best perplexing. To whom does he allude in this reference to the maize growing huntsmen of the interior? Most people will answer that it must be to the Déné Indians who, in the latitude within which the subjects of his sketch are stationed, people the American Continent practically in its whole breadth. Of course, he cannot thereby refer to the Iroquois and the Hurons whose habitat is close to the Atlantic, not the Pacific coast. Now it is so well known that the Dénés were but recently innocent of the least attempt at cultivation that I cannot regard this extraordinary assertion as anything else than a slip of the pen.

A natural apathy, lack of artistic ambition or want of skill caused the Western Dénés to be practical, rather than æsthetic craftsmen. Where extra exertion was not absolutely necessary, it was very seldom bestowed upon any kind of work. Therefore most of the implements which we shall examine in the following chapters are exceedingly simple and sometimes even rude in appearance. For instance, the Déné, knowing by experience that a stone lashed, while in its natural state, to his fishing-net was doing as good service as the most elaborate sinker, never attempted to fashion it into any of the artistic shapes given similar implements by many other families of Aborigines. For this reason carved or even merely grooved sinkers are also to be classed among the industrial implements unknown to the Western Dénés.

A fact which will perhaps elicit incredulous comment is that not only our Aborigines' earliest acquaintance with tobacco, native or Nicotian, dates only from 1792 for the Tsé'kéhne and 1793 for the Carriers, but even the very act of smoking was unknown to them prior to those dates. As a consequence, pipes of any material or form are an adventitious

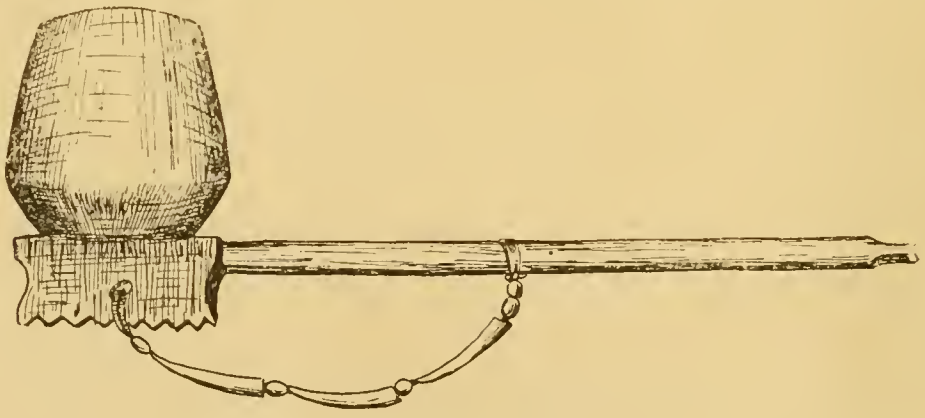

Fig. 1.

item amongst them. Fig. 1 represents the earliest known model of pipes of Déné manufacture. It consists of a stone bowl with a serrated base wherein a wooden stem has been inserted. Bowl and stem are connected

by means of a chain of dentalium shells alternating with coloured glass beads. A pipe strikingly similar in form, but *minus* the string of shells and beads, was also in use among the Shushwap Indians, the southern neighbours of the Western Dénés, as appears from a sketch in Dawson's "Notes on the Shushwap People of British Columbia." *

Against the above assertion as to the absence of smoking pipes among the primitive Dénés, it might be contended that the TsiɬKoh'tin, who were more venturesome than the two other tribes, must have known through the Coast and Shushwap Indians, the species of wild tobacco which is said to have been cultivated by the natives of Queen Charlotte Islands, or gathered in its wild state by the Shushwap.† But to any person who is aware of the irresistible attraction all races of Aborigines feel towards the use of the soothing weed, whether genuine or counterfeit this hypothesis will appear altogether gratuitous. Albeit the tribal intercourse between the Tsiɬkoh'tin and the Carriers was formerly a rather rare occurrence and not always of the most friendly description, had smoking been in vogue among the former, the latter could not well have failed to notice in their neighbours a practice which is claimed to have appeared so strange to them at the time of their first meeting with the whites. Now both the Tsé'kéhne and the Carriers are positive that it was unknown to their ancestors previous to their encounter with *Mə-tsi-ra-nətɟoñ* ‡ or Sir Alex. McKenzie; and they still recount, with no lack of amusing details, first their stupefaction at beholding smoke issuing from men's mouths, and then their scorn for tobacco when they ascertained that it was not edible. §

* Transact, R. S. C. p. 12, fig. 3; 1891.

† *Vide:* "On the Haida Indians of Queen Charlotte Islands," by G. M. Dawson, p. 114 b, 115 b, Montreal, 1880; "Notes on the Shushwap People of B.C.," by G. M. Dawson, Trans. R.S.C. Sect. II., p. 23, 1891; "Descriptive Notes on Certain Implements," etc., by Al. Mackenzie, Trans. R.S.C., Sect. II., p. 55, 1891; "The Coast Indians of Southern Alaska," etc., by A. P. Niblack, p. 333, 1890.

‡ In Tsé'kéhne: "his hair is plentiful," perhaps by allusion to the wig or queue worn by Sir Alex. Mackenzie.

§ The derivation of the word *ətc'ka*, by which the Carriers designate tobacco, has long puzzled me. It must be either a borrowed word or a word formed by agglutination, as the name of the horse (*yezih-ɟi*, "elk-dog" or domestic elk). Now I have studied that word in the vocabulary of over twenty tribes, all contiguous, mediately or immediately, without being able to discover anything like an homonymous equivalent. On the other hand, the two parts of which it is composed, *ətc* and *'ka*, are genuine Carrier particles which, taken separately, are not without meaning, but to which no rational signification can be ascribed when joined together. Yet the names of all new objects in the Déné languages are either borrowed from foreign dialects, or more generally formed by compounding, that is by the juxtaposition of two or more names of objects already known. Thus, in TsiɬKoh'tin the name of the tobacco is *tsəɟ-yu*, which means "smoke-medicine." Altogether, the Carrier (and Tsé'kéhne) word designating that imported plant has the appearance of an old root of the second category, which is to me inexplicable.

Pipe Fig. 2 is of recent manufacture, and bears testimony to the Tsi|Koh'tin's faculty of imitation. It has been wrought out of an impure steatite or soap stone. Its stem is a wooden tube connected with the base of the bowl by a double string or chain of black beads. The stem of such pipes is more generally lengthened through the insertion of a perforated brass cartridge shell between the base and the mouthpiece.

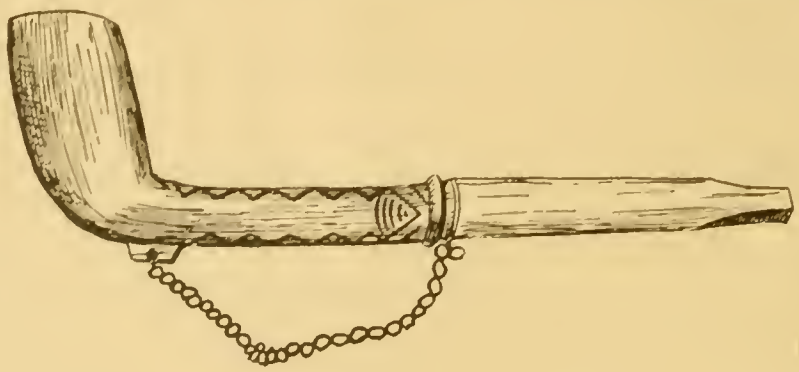

Fig. 2.

Specimens of pipes identical in form, and sometimes in material, though many are of serpentine, are also found among the Tsé'kéhne. But now-a-days the poorest Carrier scorns them as utterly unsuited to his present state of civilization.

CHAPTER III.

Stone Implements.

Some scientists seem to have an innate fondness for the mysterious and the insolvable. Upon the slightest pretext they delight in creating difficulties or propounding problems. They long for novelties and must soar above the concepts of such weak-minded mortals as are naive enough to pay any attention to the "Hebrew myths" of the creation of man and his comparatively recent appearance on the scene of this world. Whereas in modern times we have no authentically recorded instance of mound building by American Aborigines,* and because some of those artificial works are of considerable magnitude, they jump to the conclusion that the so-called mound-builders must have been a very ancient race, more advanced in civilization than the Indians of our days and altogether different from them.† In like manner, because in Europe, and in some parts of America stone implements have been discovered which are of a particularly rude pattern, they infer that these remains being found in river beds or, in Europe, imbedded in geological strata supposed to have been formed at a very remote epoch prove the existence, not only of prehistoric, but even of pre-Adamite man. Students who prefer to rely on the authority of such an unerring guide as the Bible to following modern savants through their ever shifting, if not conflicting, theories, cannot but remark, I fancy, that, in the same way as the latest researches tend to confirm the opinion of those unprejudiced antiquarians who from the beginning doubted the great antiquity of the American mounds and the extraneous nationality of their builders,‡ even so it must ultimately

* As will appear from note ‡ the Cherokees did erect mounds, though unobserved by the whites, within the present century.

† "So strong in fact is the hold which this theory . . . has taken of the minds of both American and European archæologists, that it not only biases their conclusions but also moulds and modifies their nomenclature, and is thrust into their speculations and even into their descriptions as though no longer a simple theory, but a conceded fact." *Burial Mounds of the Northern Section of the U. S. by Prof. Cyrus Thomas; Fifth Ann. Rep. Bur. Ethnol.* p. 80.

‡ Evidence corroborative of this assumption would fill many pages. Scientists in every way qualified to speak on this subject and to whom nobody can refuse a hearing have clearly shown the futility of the theory which ascribes the erection of the mounds to non-Indian races. Prof. Cyrus Thomas, than whom I think there is no more reliable authority on the subject, lays down as one of the conclusions derived from the mound explorations under the auspices of the Smithsonian Institution that "nothing trustworthy has been discovered to justify the theory that the mound builders belonged to a highly civilized race, or that they were a people who had attained a

prove to be the case with regard to the fabulous age ascribed to what are called palæolithic implements. By the end of the last century Voltaire and his school were wont to adduce the pretended enormous antiquity of the Egyptian monuments as an irrefutable evidence of the inaccuracy of the Mosaical chronology. Time went on, and the days came when Champollion and Sir. H. Rawlinson deciphered the Egyptian and Assyrian inscriptions. Then the very same works which fifty years before were instanced as an excuse for the encyclopedists' sneers at the Scriptures were converted into the best extrinsical proof of the accuracy of the Mosaical account.

I am not an archæologist, much less a geologist. Yet, upon entering into a question in connection wherewith so many strange and, to me, evidently

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higher culture status than the Indians. It is true that works and papers on American Archæology are full of statements to the contrary which are generally based on the theory that the mound-builders belonged to a race of much higher culture than the Indians. Yet, when the facts on which this opinion is based are examined with sober scientific care, the splendid fabric which has been built upon them by that great workman, imagination, fades from sight. . . The links discovered directly connecting the Indians and the mound-builders are so numerous and so well established that there should be no longer any hesitancy in accepting the theory that the two are one and the same people. . . The testimony of the mounds is very decidedly against the theory that the mound-builders were Mayas or Mexicans" *Work in Mound Exploration of the Bur. Ethnol., Washington, 1887, p. 11-13.* To corroborate by actual facts my position on this question, I glean from the same paper the following extracts:—"In another *Wisconsin* mound . . . was found lying at the bottom on the original surface of the ground, near the center, a genuine, regularly-formed gunflint. In another *Tennessee* mound some 6 feet high and which showed no signs of disturbance, an old fashioned horn handled case-knife was discovered near the bottom. . . From a group in Northern *Mississippi* in the locality formerly occupied by the Chickasaw were obtained a silver plate with the Spanish coat of arms stamped upon it, and the iron portions of a saddle. At the bottom of a *North Carolina* mound, part of an iron blade and an iron awl were discovered in the hands of the principal personage buried therein. . . At the bottom of an undisturbed *Pennsylvania* mound, accompanying the original interment . . . was a joint of a large cane wrapped in pieces of thin and evenly wrought silver foil, smoothly cut in fancy figures." *Ibid. p. 9 and 10.* I have underlined the names of the states mentioned to show that mound-building in post-Columbian times was by no means local or exceptional. To the above should be added the still more significant fact that in a small undisturbed mound in east Tennessee a stone with letters of the Cherokee alphabet rudely carved upon it was lately discovered by a party of American explorators. *The problem of the Ohio Mounds*, p. 37, note 1. Dr. D. G. Brinton in his latest work, *The American Race*, p. 87-88, admits that "there is, to say the least, a strong probability that they [the modern Muskokis] are the descendants of the constructors of those ancient works" [namely, the mounds in their vicinity]. Over and above the authorities already quoted, here is how Dr. J. W. Powell, the learned head of the Bureau of Ethnology, Smithsonian Institution, ends a review of an important paper by Mr. W. H. Holmes:—"This eliminates one more source of error cherished by lovers of the mysterious to establish and exalt a supposed race of Mound-Builders." *Third Ann. Rep. Bureau of Ethnology*, p. lxiii.; Washington, 1884. Nobody will deny that that gentleman, owing to his official position, enjoys opportunities of judging of the merits or demerits of a cause of which few indeed can boast. Lastly, it must be added that unlimited evidence goes to prove that in almost every case the modern Indians occupy the exact territory where their forefathers lived when they first came in contact with the whites.

false theories have been built, I feel the necessity as a Christian and an observer of my own surroundings to put on record my utter disbelief in any proposition which may run counter to the natural deductions from the Book of Genesis. True, even Christian anthropologists are far from agreed as to the probable age of man, since such a learned orientalist as the Abbè Vigouroux suggests * and Father Thein inclines to believe † that creation dates from over 8000 years as against the 6000 which it was customary to reckon as the maximum distance which separates us from Adam. Yet methinks that there are limits beyond which modern interpretation of the sacred text cannot safely go. I suppose that no person who has any regard for the authority of the Bible—I am tempted to add, and for sober, common sense ‡—will believe in the hundreds of thousands of years attributed by some to palæolithic stone implements and consequently to man. To show that there are valid reasons to doubt the correctness of such chronological computations, let me adduce here a few facts derived from the very source to which they are wont to point in confirmation of their extravagant theories, I mean Geology.

The great antiquity attributed in Europe to stone implements is based generally on the age of the geological strata wherein they are found. For the sake of briefness, let us choose those the formation of which is the most easily accounted for, say the alluvial strata. Pieces of pottery found at a depth of thirty-nine feet in the mud of the Nile delta were pronounced by antiquarians of repute to be 13,000 years old. Such authorities as Sir John Lubbock and Sir Charles Lyell asserted in various papers that those Egyptian relics must date back from 12,000 to 60,000 years. Now, Sir R. Stephenson found at a *greater* depth in the delta, near Damietta, a brick bearing on its surface the stamp of Mohammed Ali ! § The discoverer of the pieces of pottery " rated the growth of the mud deposit in a given spot at only three and a half inches in a century ;

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* *Les Livres Saints*, etc., Vol. III., p. 238.

† Christian Anthropology, p. 245, New York, 1892.

‡ For my own justification and to illustrate the vagaries of some modern scientists, let me recall the fact that from the supposed vestiges of man discovered in the strata of the tertiary period, some geologists assign a date of at least 300,000 years before the beginning of the historic epoch. Now a clever Italian writer who has made an arithmetical computation of the number of men who must have been existing on the earth at the time commonly assigned to the creation of Adam according to that hypothesis, finds that this number cannot be expressed without 434 figures ! Suppose the habitable part of the earth extended in a series of stories each one meter in height and filled with men in the ratio of 10 to each square meter as far up as 400 times the radius of the moon's orbit and the limits of the earth's orbit will be reached and yet the number of these men will be represented only by the figure 2 followed by 26 ciphers.

§ Christian Anthropology, p. 267, New York, 1892.

but a description of the same spot by a Mohammedan writer only six centuries ago shows that the mud is deposited at the rate of over eighteen inches in a hundred years."*

An English resident in India recounts that the foundation of a house he had himself built was carried away and strewed along the bottom of a river at a depth of thirty or forty feet below the level of the country. "Since then the river has passed on," he says, "and a new village now stands on the spot where my bungalow stood, but forty feet above the ruins; and any one who chooses to dig on the spot may find my *reliquiæ* there, and form what theory he likes as to their antiquity or my age."†

Again, antiquarians of a geological turn of mind should remember, it seems, that in most cases the agents which now produce alluvial deposits were formerly many times more powerful and that therefore strata containing archæological relics were formed at a proportionately greater rate. Take, for instance, the valley of the Somme in France. No region has probably become so famous in the Annals of Archæology. The Somme is to-day a modest river with very quiet waters. Now, according to M. de Mercey, who has made a careful study of its history, its waters at the Roman epoch were fifty times more abundant than in our days.‡ Moreover, it is a well established fact that the sea at that time must have extended to Amiens, since below a marine deposit nine feet thick coins have been found, the most recent of which bears the effigy of a prince who died A.D. 267.§ In the neighbourhood of Lille, a medal of Marcus Aurelius was found at a depth of twenty-five feet under a triple bed of reddish clay, muddy slime and peat mixed with sand.‖

Thus Geology refutes itself the theories of the partizans of the great age of the primitive stone implements, theories which they claim to base on geological grounds. Let us now see what History has to say on the same subject.

The contention of the majority of antiquarians is that the stone age long antedated the historic period. In opposition to this, O. Fraas states that "arrows with sharp flint heads, and especially stone axes, stone chisels and stone hammers are found among the Germans, even down to the time of the Franks. . . . According to Herodotus, Ethiopians

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* Southall, Recent Origin of Man, p. 474.

† Quarterly Journal of the Geological Society, p. 327, Aug. 1863.

‡ *Bulletin de la Société Géologique*, 1876-77, p. 347.

§ Christian Anthropology, p. 260, New York, 1892.

‖ *Matériaux pour l'histoire de l'homme*, p. 136, 1878.

accompanied the army of Xerxes, who were so savage that they possessed only weapons of stone and bone . . . ; they had long bows made of the ribs of palm leaves and reed arrows with pebble points; their javelins were pointed with the horns of gazelles."* Five hundred years later, Tacitus says of the Fenni: "They have no (iron) weapons. Their only means of attack are arrows to which, having no iron, they give a bone point."† Cæsar tells us in his *De Bello Gallico* ‡ that the Gauls, while besieging Alesia (52 B.C.), made use of stones and pebbles. An epic poem of the fifth century describes two warriors battling with stone axes.§ St. Ouen, bishop of Rouen in the seventh century, speaks of flint hatchets in his "Life of St. Eligius." As far down as 1066, projectiles of stone were in use in Europe according to William of Poitiers. It even appears that more than a century later the Scots of Wallace made use of stone arms. ‖

History records many other similiar examples. I am well aware that the advocates of the great antiquity of man and human implements base their views on divers other reasons. But I think that all of these can be as easily disposed of.

Industrial Implements.

The facts above recited are necessary to establish the really modern origin of many stone implements which some regard as absurdly ancient, and therefore if, in the course of the present monograph and more particularly of this Chapter, Dené implements or weapons are occasionally assimilated to objects, even palæolithic, of the same description found in the alluvial strata of Europe, my comparisons, instead of appearing preposterous, should be construed as additional evidence of the relatively recent origin of the European "finds." For, I cannot help thinking that some spear heads, for instance, which were in use here but one hundred years ago are identical in form and finish with weapons of the Solutrian period of the unpolished stone age. As for the industrial implements, and especially the axes of the prehistoric Dénés, though they might not perhaps be classed with strict propriety among palæolithic implements, I think they could not properly be styled neolithic, since they were mostly unpolished, except at the cutting edge.

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* *Die alten Höhlenbewohner*, p. 30.

† *Apud* Christian Anthropology, p. 320.

‡ Book VII., 81.

§ *Ampere, Histoire littéraire.*

‖ Christian Anthropology, *passim.*

Thus in fig. 3 we have a celt of a dark coloured, very close-grained rock which shows absolutely no sign of polish except at the cutting edge and, if I am to credit the Indian from whom it was obtained and who used it for some time as a skin scraper, even this faintly polished edge was wanting when the instrument was found on the surface of the ground. It would seem that these rude, unpolished axes were, at least among the Carriers, much more common than those entirely or even partially polished.

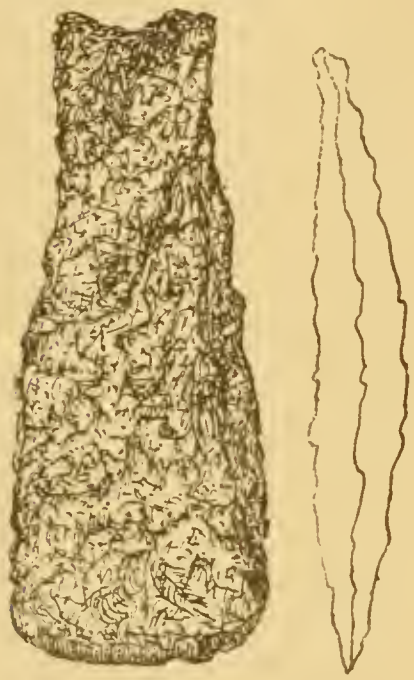

Fig. 3. ½ size.

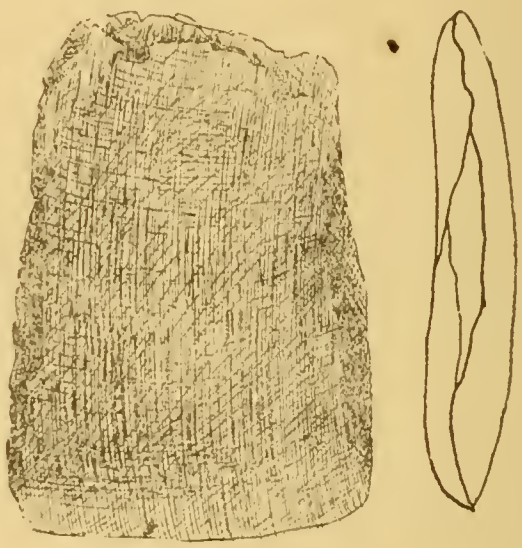

Fig. 4. ½ size.

Fig. 4 hardly exhibits any trace of improvement on that primitive pattern. Indeed the specimen it represents has even cost the maker a smaller amount of exertion, since one of its flat surfaces is merely the original surface of a blackish siliceous stone in its natural water-worn state, while the reverse is evidently the result of the splitting of the pebble out of which the implement has been made. Were it not for the unmistakable attempt at obtaining by friction a finer edge than is usual in scrapers, one would almost suppose that it has been designed for dressing skins rather than cutting wood.

The specimen illustrated by fig. 5, though unpolished except at its broadest end, is more axe-like in shape. It is of a shaly rock externally rusty-looking, but internally of a reddish gray transversely striated with fine parallel lines.

The implement represented by fig. 6 again differs both in form and material from all the preceding specimens of stone axes. It might be described as gouge-shaped, were itnot that no concavity corresponds to the convex exterior. No attempt at diminishing by friction the bulging surface of the stone has been made; its main asperities only have been

polished off. It is of a gray basaltic rock, regularly wood-veined and very hard.

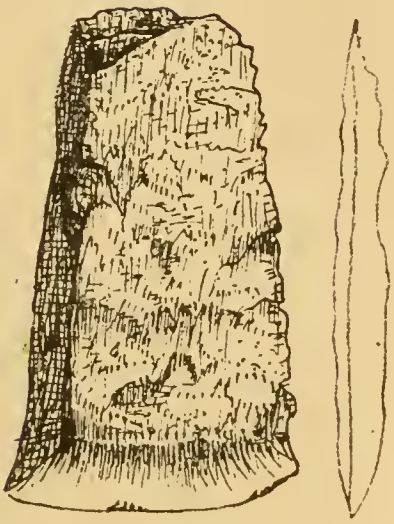

Fig. 5. ⅓ size.

Fig. 6. ½ size.

Here (fig. 7) we witness a sort of transition between what might perhaps be called the medio-palæolithic and the neolithic types, in that this adze-blade has been treated to a partial polish elsewhere than at its edge.

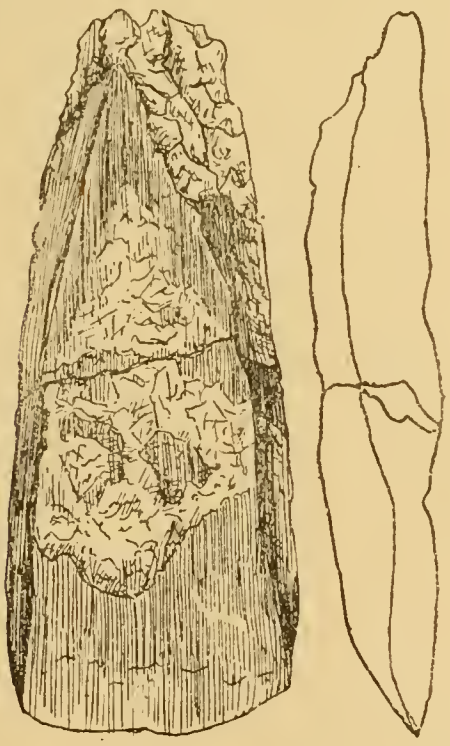

Fig. 7. ⅓ size.

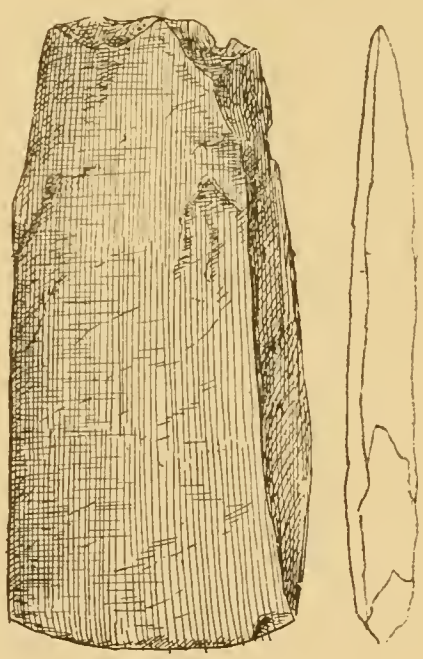

Fig. 8. ⅓ size.

It is of a fine-grained volcanic rock which has been rendered rather hard by pressure subsequent to its original cooling. It is disproportionately thick and fully 8½ inches long.

All these differences in type and material are suggestive of what appears to be a well established fact, namely that the Western Dénés had no fixed standard in view when engaged in the manufacture of their adze-blades. Any stone of sufficient hardness and consistency was probably picked up, and after a rough blocking off, was given as sharp an edge as the material was susceptible of acquiring by means of the least possible exertion. No attention whatever seems to have been paid to the details and no regard manifested for the elegance of the implement.

This remark applies to adze-blades of genuine Déné origin. But the Carriers, especially the more prominent members of the tribe, possessed much finer axes of which fig. 8 is a fair example. This is a thoroughly polished stone axe. In shape and material it is typical of all the polished implements of that class. They are, as a rule, of a greenish gray rock identified by Dr. G. M. Dawson as fine felspathic slate or falsite. Although they were extensively used among the Western Dénés, it would hardly be consistent with truth to credit the latter with their manufacture. Indeed I am rather inclined to believe—and this is borne out by the declarations of living aborigines—that, in so far at least as the Carrier tribe is concerned, most of them were imported from among the neighbouring tribes. The Carriers of the old stock were exceedingly poor workmen, and their old men are unanimous in asserting that their best axes were bartered from the Tsé'kéhne and the sea-coast Indians. It is therefore quite possible that the implement above figured had an extraneous origin.

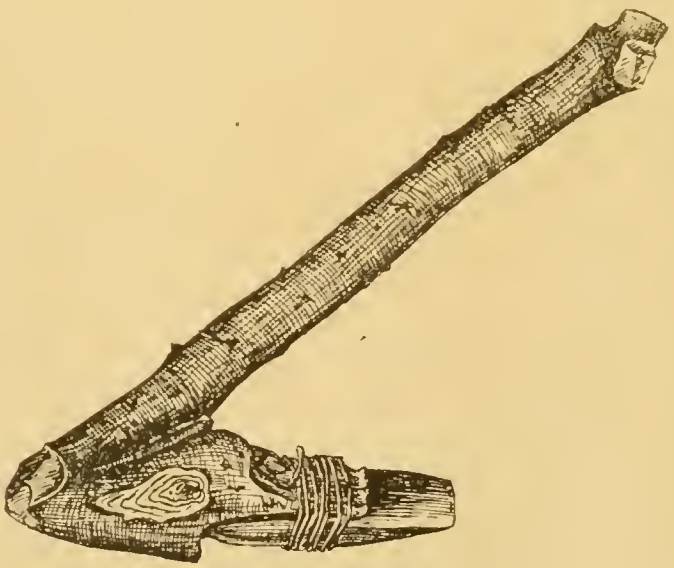

Fig. 9.

All these various types of axes were hafted to a handle generally of

black thorn,* *Prunus spinosa*, as is shown through fig. 9. The adzes thus obtained never had a cutting edge fine or hard enough to serve crosswise against wood, and the axeman's strokes had always to be directed obliquely.†

It must be noted also that, among the Carriers, such instruments were possessed by the notables and a few wealthy heads of families only. The common people had recourse to fire to cut their provision of wood. After having freed the main roots of a tree of the earth adhering thereto by means of slight excavations underneath, they would light there a small fire with vegetable matter with the result that the tree would inevitably topple over at the latest on the morrow thereafter. Then the smaller limbs were trimmed off either with a hard stick, with a stone club if any was at hand, or, among the Babines, with a bone or horn implement specially fashioned for the purpose. Smaller trees were next crossed over the trunk at the proper intervals to give the desired length to the pieces of wood, after which a fire was started at each point of intersection and maintained by the children or the women until both the larger and the smaller trunks were burnt asunder.

If too bulky to easily burn in the fire-place, the wood was then split with the help of wedges and a roughly formed wooden maul. Except among the Tsi[Koh'tin, the stone hammers and sledges so common among the coast Indians were unknown. For peculiarly heavy work such as sinking down the stakes on the solidity of which depends the firmness of the salmon weirs, they sometimes did, and even now do, use such elongated stones as bear the greatest resemblance to their *hwot'saz* or wooden maul; but these are never pecked or fashioned into regular sledges.

Fig. 10.

The Carriers' wedges‡ were either of hard wood, of the part of the

* In Carrier *Kwas-tco*, "big thorn."

† The axe is called *tsel* in Tsi[Koh'tin, *tsél* in Tsé'kéhne and *tsil* in Babine; whilst, curiously enough, the Carriers now call it, and seem to have done so as long as any old man can remember, *tsé-tsil*, or stone-axe. Nevertheless, the Déné name of this primitive implement is evidently *tsel* or *tsil*, a primary root.

‡ *Yil*, pr. root.

cariboo horns next to the skull of the animal, or, in some cases, of stone (Fig. 10).

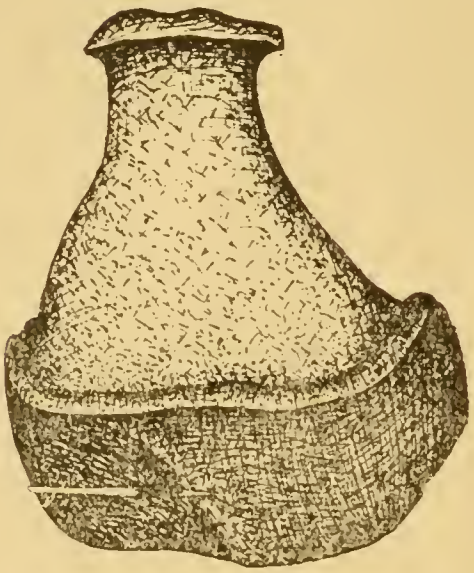

Fig. 11.

Fig. 12.

The implement illustrated above (Fig. 11) is a pestle* of a coarse variety of quartzite, of which Fig. 12 gives a side view. The lower half of the instrument has been left undisturbed by the artist, the handle only being pecked and smoothened to a fine enough finish. This pestle did service among the Babine Indians.

Fig. 13. ⅓ size.

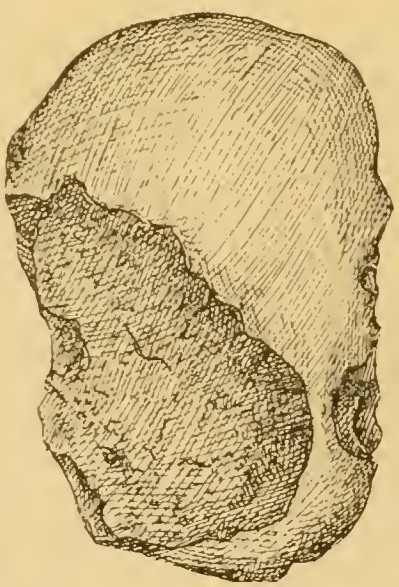

Fig. 14. ½ size.

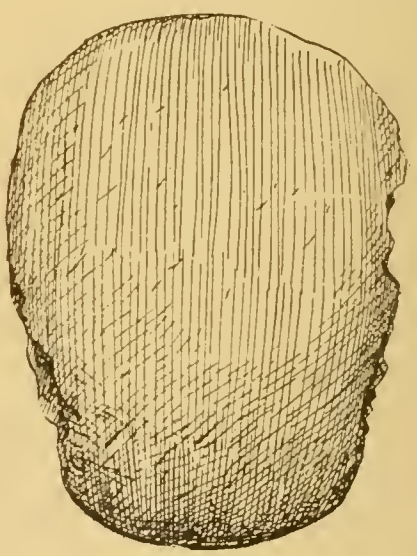

Fig. 15. ½ size.

A very different model is shown in Fig. 13, wherein we have an implement of Tsiɬkoh'tin origin. It served a double purpose, being at

* *Pe-ɔtsəl*, "wherewith one pounds," v. n.

the same time a pestle and a hammer.* But the mode of using it was identical in both cases; the contact between the matter pounded or hammered was only at the bottom of the larger end, the hand grasping the instrument in the middle. I have witnessed old men working with such stone hammers among the Skwahomish† with whom the Tsiɬkoh'tin have occasional intercourse.

All races of American Aborigines are proverbially improvident, and our Western Dénés cannot be said to form an exception to the rule. Yet these very implements, when used as pounders or pestles, testify to the fact that the Carriers at least had at times a thought for the morrow. In times of plenty, they pounded therewith dried salmon previously well grilled by the fireside, and kept the mash in a *tcaɟɟaɟ*, one of their bark vessels which shall be described further on. When this had been sprinkled over with salmon oil, the vessel was hermetically closed and the whole laid aside for use when, owing to the failure of the fishing season or any other cause, the natives were hard pressed by famine. Under similarly strained circumstances, salmon bones, or indeed the bones of any animal, were, and are, also likewise treated, and made to obviate similar needs.

Fig. 16.

Here (figs. 14 and 15) are slickstones or stone scrapers,‡ which serve in the process of tanning hides. As may be seen, they are of a very primitive pat-

* *Pe-əlt'ɟəz*, "wherewith one pounds or hammers," a verbal noun.

† The Sk·qō'mic of Dr. Boas.

‡ *Pe-əltzéh* "wherewith one scrapes" in Carrier; *tsé-tqél*, "stone-broad" in Tsé'kéhne.

tern, and neither of the two evidences any regard for elegance. And yet they are fair representatives of their class, even of those which are still in use among the modern Carriers. They generally consist of flat halves of oblong pebbles one end of which has been slightly trimmed by chipping with a hard stone. The object of such implements being to soften by repeated pressure the hide which has already been stripped of its hair and adherent blood and fat, these scrapers receive no polish whatever. This is why I rather hesitate in classing among the skin scrapers the instrument represented by fig. 16, which is a "find," and was not, like those above figured, in actual use among the natives when handed to me. It is of a very fine grained black volcanic rock polished at the broadest end *a*, and as it is drawn natural size, it is, if any, the smallest skin scraper I have ever seen.

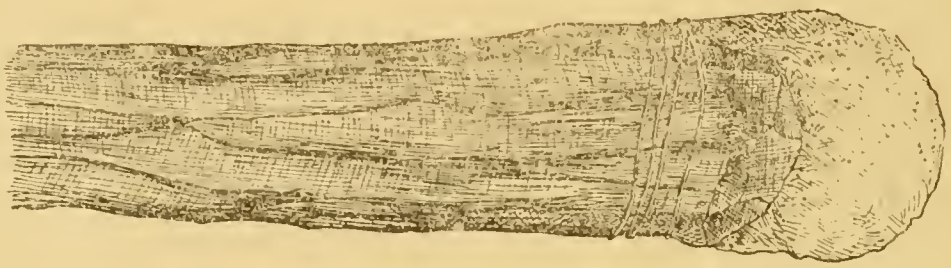

Fig. 17.

Most of these tools have received very little artificial treatment in their manufacture. In fact, they are almost invariably made as follows : any flat pebble which is likely to split as desired and thus yield easily suit-

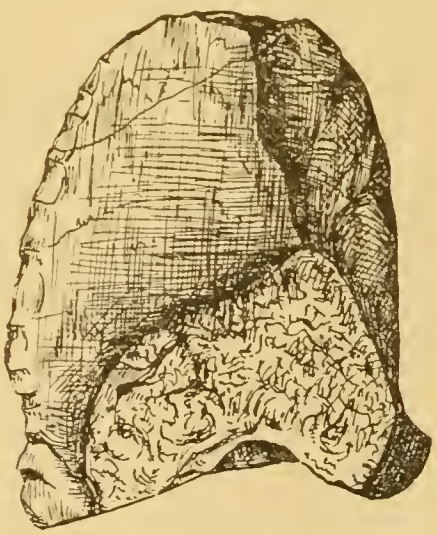

Fig. 18.

able material for the intended scraper is secured up between two stones on the ground and then split asunder by vigorously throwing a large stone on its upper end. The half which best answers the purpose in

view is then trimmed to the proper shape by chipping off any too prominent asperities, or blunting the edges, should these prove too sharp.

The scraper is finally hafted, as shown herewith, by inserting it in the cleft end of any stick at hand over which a rope or buck line is securely lashed. This hafting is but temporary, as the stone part only of the implement is usually kept among the family chattels.

To the unthinking reader unmindful of the straits to which man may be reduced in the absence of the proper material and while too hard pressed by more urgent needs to look for it, the above (Fig. 18) might not be more than a useless piece of quartzite. But an experienced archæologist will not fail to detect therein unmistakable signs of human handiwork, and its fine, if somewhat serrated edge will at once suggest that it did formerly duty as a cutting tool. It is a salmon knife, which served first to rip the fish open, and then to cut longitudinal furrows through its flesh previous to exposing it to the action of the air. The large flaking noticeable near its blunt end is not accidental, but served as a grip for the thumb, while the index and medius fingers rested respectively on the back or thick side and on the reverse surface of the implement.

Fig. 19.

Fig. 20.

Figs. 19 and 20 represent stone knives* of different pattern and use. They are skinning knives and their material is augite-porphyrite.

* The Carrier word for "knife" is the same as that for "iron," viz., *ɔzthih* in Upper Carrier and *ɔthĕ́s* in Lower Carrier.

Both are drawn natural size and their cutting edge is at the fore-end. Knive fig. 19 was used without handle, but fig. 20 was hafted to a short stick as is manifest from the side notches discernible therein. The identity of these instruments is beyond the possibility of a doubt, as it has been established by the testimony of an old Indian who used himself similar knives in his youth when no better ones were obtainable.

The most serviceable and therefore most highly priced working or carving knives in use among the prehistoric Dénés were nothing more or less than beaver teeth sharpened when necessary, by friction on a hard stone. But owing to the perishable nature of the material, none is now available for illustration. The only stone carving knife which has ever fallen under my observation is that herewith figured (fig. 21). I believe it to be of genuine black flint. The cutting edge is at *a* and it is still very keen. Notches at *b* and *c*, though slight enough, appear nevertheless to be quite intentional, and were it not for the symmetrical rounding off of the broadest end, they would suggest a double handle as the original means of facilitating work therewith. The Indians neither account for these notches, nor satisfactorily explain the mode of handling the knife.

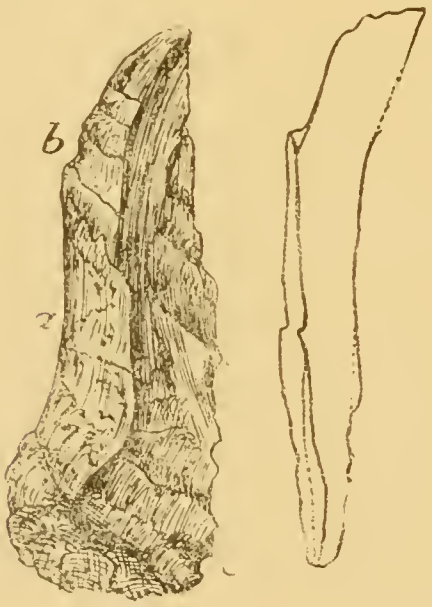

Fig. 21. ½ size.

Fig. 22. ½ size.

Fig. 22, represents a piecce of broken object the original use of which is likewise problematic. It is of a variety of green marble variegated with yellow and rusty red. The broadest end has been thinned to a dull edge and, except where it shows signs of accidental breakage, it has received an exceedingly fine polish. Indeed, though it has been found here, at Stuart's Lake, I believe it far too skillfully finished to be of Déné manufacture. It must have been imported from the Coast.* But

what renders this relic particularly remarkable is the presence of the very fine grooves noticeable on each of its three unthinned edges, two only of which appear in the cut above, the third being on the reverse of the implement. This peculiarity, while rendering the identification of the find more difficult, suggests a similarity of form though certainly not of use, with an implement formerly common among the Carriers under the name of *əzih*, "it grinds through." It consisted of two stone tablets carefully polished at least on one side so as to permit of their being closely joined together. In the middle of their polished surfaces was a groove obtained probably by pecking, not friction, which when both tablets were superposed formed a cylindrical hole through which gambling sticks, arrow shafts, etc., were repeatedly passed and thereby given an exquisite finish. None of these implements is now extant. They were the equivalent of the wooden wrenches used by the Hupas under similar circumstances.

Weapons of War and of the Chase.

Prominent among these were, of course the arrow,* and its correlative the bow.†

The arrow heads ‡ of the Western Dénés were either of stone, of bone or horn, or of wood. The form, no less than the material, of the stone arrow points greatly differed. In fig. 23 will be found specimens representative of the most common patterns. Many of them are quite diminutive in proportions, and would seem to partake more of the nature of play-things than of that of the deadly weapons they undoubtedly were. As regards shape, those marked *a* and *b* may be described as the typical arrow-points of the Western Dénés. In common with specimen *c*, whose main peculiarity is the absence of one of the usual side notches, they are of a blackish resonant rock which I long mistook for a variety of flint, but which Dr. G. M. Dawson declares to be a very fine grained augite-porphyrite. The Carriers call this stone *pîs*, and it is one of the 16 varieties of rocks known to their vocabulary. They used it in the making of the largest number of their missile weapons, arrows, spears, etc. It is but right to remark here that the point *a* is so much larger than most genuine Déné arrow heads, that some Indians claim it was a bow, not an arrow point. Of the bow points further mention will soon be made.

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* *'Kra*, prim. root.

† *Ɜɿthi.* Singularly enough the Carriers have a collective name for bow and arrow taken together. This is *'Kra-zza.*

‡ *Nûntai*, second. root.

A less common and more valued material, called *nəlre* in Carrier, is the obsidian of which the arrow-point marked *d* is formed. Such points are generally very small. *e* represents the most beautiful of all the arrow heads in my possession. It has been ingeniously chipped of a hard crystalline rock identified by Dr. Dawson as smoky quartz. Its form and

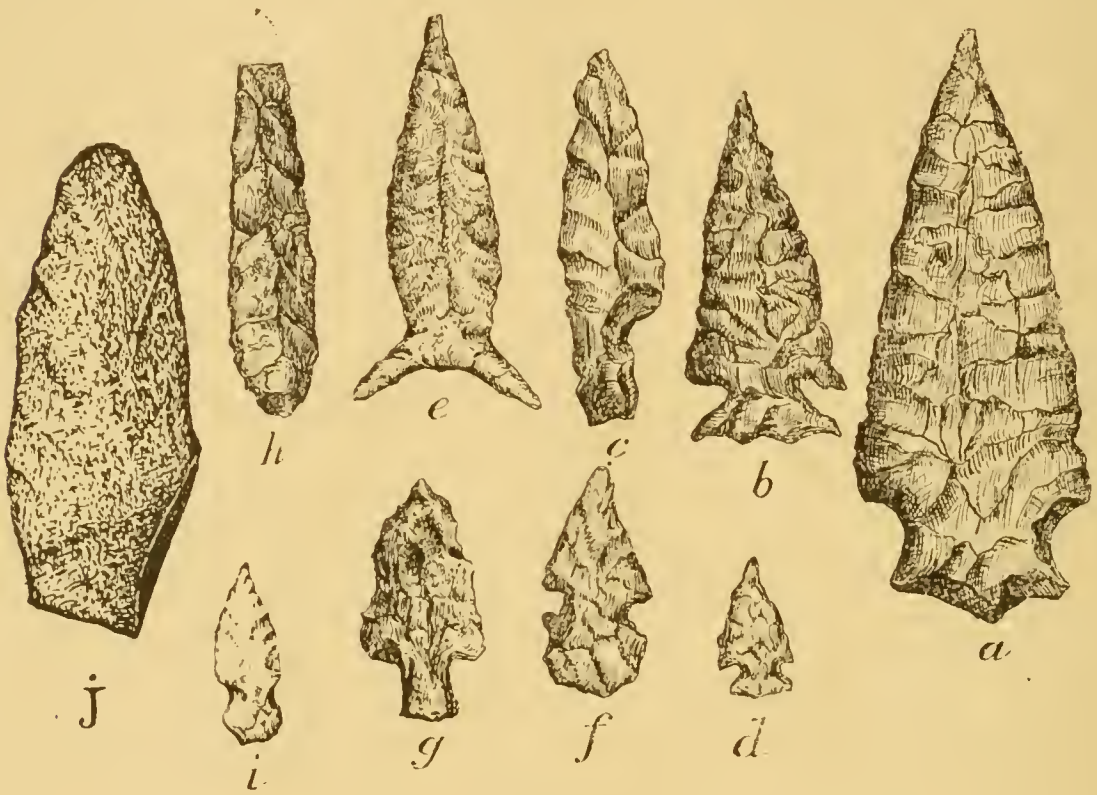

Fig. 23.

finish display evidences of exceptionally good workmanship, too good in fact to be Déné; and I cannot help supposing that it must be some relic left among the Carriers by some coast warrior after one of those many conflicts recorded in the traditions of the old men. Other points, such as those labelled *f*, *h*, are of a species of translucent vitreous rock which probably does not essentially differ from that of specimen *e*.

That marked *h* is remarkable for the absence of both notches. It is long, narrow, and so thick that but for its intentionally thinned edges it might be taken for a drill point. A few arrow heads as that marked *g* are of chalcedony, *tsé-lkrai* (stone-whitish). They are as a rule of a rather rude description.

All the above are drawn full size. Specimens *d* and *i*, when seen otherwise than on paper, appear very small and tiny indeed. Yet it would be erroneous to suppose them to be mere anomalies or exceptions. Judging from the number of Déné arrow heads in my collection, such diminutive implements form at least one quarter of all the arrow heads now extant.

Lastly, a few points are of a black, very hard and fine-grained stone, differing from the material of all the arrow heads already described. Such is that marked *j*. It is the only one of that description which I have ever seen. It is blunt-tipped, and with hardly any edge or sign of flaking. It has the exact appearance of an implement very much the worse for wear.

There are to-day no well-authenticated Western Déné arrow-heads of bone or ivory in existence. Their tip was not pointed like that of the stone weapons. They were mere beaver teeth in their natural state secured to a shaft. Some of these were also of the root part of the cariboo's antlers, and both bone and horn arrow-tips were considered exceptionally effective.

Fig. 24.

Fig. 25.

In Figs. 24 and 25 I have tried to illustrate the modes of connecting the stone points with the shaft, as formerly practised by our aborigines. Sometimes the shaft was simply cleft open to receive the point (Fig. 24), and sometimes it was slit at the end as in Fig. 25. In either case, point and shank were firmly fastened together with sinew and pitch. The foreshafts used along with the arrows of some American races were unknown here.

The shaft * of the Western Déné arrows was invariably of seasoned amelanchier *(A. alnifolia)* wood. As partially visible in Fig. 25, delicate grooves, one on each opposite side, ran through the shank of the weapon and were intended to facilitate the detection of the game when it had been only wounded. The blood issuing from the wound, by flowing

* Kəs, a primary root.

freely through these grooves, dropped on the snow or bare ground in a less-scattered condition, thus aiding the hunter in tracking the animal ere it was finally dispatched.

Fig. 26.

Fig. 26 gives a fair idea of a Carrier arrow ready for use. As may be seen, the feathering is triple. The tips only of the feather quills are fastened to the shaft. Sinew and pitch were restored to in order to secure the part of the quills adhering to the shaft end, while sinew alone generally sufficed to fasten the larger or root end of the feathers.

A variety of arrow* which was entirely of amelanchier wood without stone or bone point or shaft grooves did service in connection with target practice or one of the games which shall be described further on. (Chap. VI.)

The Tsé'kéhne, who to this day live almost entirely on the spoils of the chase, formerly far excelled the Carriers in the manufacture and use of hunting weapons. Some of these, which were indeed in actual use among the Carriers, were nevertheless of undisputed Tsé'kéhne origin. Such were the "cut arrow," the triple headed arrow and the blunt arrow.

Fig. 27.

The "cut-arrow" (*'kra-tcən-kwɔ̨*, lit. "arrow-stick-cut off") was so called on account of its peculiar shape (fig. 27). Its point was made of a cariboo horn and "was awl-like in form. Its broader extremity was hollowed out to receive a wooden shaft which served to dart it off from the bow as a common arrow, with this difference however that, when in motion, the horn point detached itself from the shaft. This projectile was deadly, and intended only for use against a human enemy or for killing large game."†

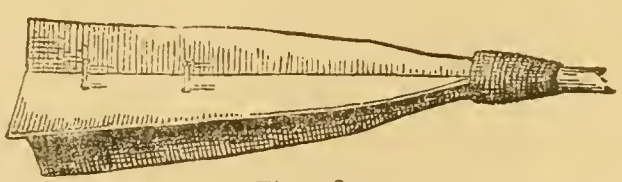

Fig. 28.

To shoot smaller game they had recourse either to the triple headed

* *'kɛ-squh*, verb. noun, meaning as far as it can be translated: "it shoots in as far as the feathering."

† The Western Dénés, etc. Proc. Can. Inst., Vol. VII., p. 140.

arrow shown in fig. 28, or to a wooden blunt arrow (fig. 29). The former* consisted of three flat pieces of bone, or more generally horn, cut transversely at their broadest extremity and fastened to the shaft through their smaller end and sides by strong sinew threads. It did good service even against large animals, and it is not more than 40 years since it has entirely fallen into disuse.

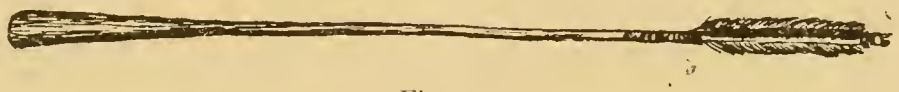

Fig. 29.

The latter† has been drawn from a specimen obtained from a Tsé-'kéhne who, in common with the majority of his fellow huntsmen, to this day finds this simple and primitive looking projectile invaluable against grouse, rabbits, etc.

Even such an apparently insignificant act as that of releasing the arrow while shooting has been analyzed so as to yield modern scientists material for ethnic divisions. Professor Morse thus classes the different methods in vogue among American, European or Asiatic archers :—

(1) *Primary.*—The notch of the arrow is grasped between the end of the straightened thumb and the first and second joints of the bent fore-finger. It is practised by children generally, and by the Ainos, Demeraras, Utes, Micmacs, etc.

(2) *Secondary.*—The notch of the arrow is grasped with the straightened thumb and bent fore-finger; while the ends of the second and third fingers are brought to bear on the string to assist in drawing. Practised by the Zunis, Ottawas, etc.

(3) *Tertiary.*—In this release the forefinger, instead of being bent, is nearly straight with its tip as well as the tips of the second and third fingers, pressing or pulling on the string, the thumb, as in the primary and secondary release, active in assisting in pinching the arrow and pulling it back. It is practised by Sioux, Arapahos, Cheyennes, Assiniboins, Comanches, Crows, Blackfeet, Navajos, Siamese, Great Andamanese.

(4) *Mediterranean.*—The string is drawn back with the tips of the first, second and third fingers, the balls of the fingers clinging to the string with the terminal joints of the fingers slightly flexed. The arrow is lightly held between the first and second fingers, the thumb straight and inactive. Practised by nations around the Mediterranean, by modern

* *Tarwɔs*, second. root.

† *Thɔs.*, prim. root.

archers, Flemish (using first and second fingers only), Eskimos, Little Andamese.

(5) *Mongolian.*—In this release the string is drawn by the flexed thumb bent over the string, the end of the forefinger assisting in holding the thumb in position. The thumb is protected by a guard of some kind. It is practised by Manchus, Chinese, Coreans, Japanese, Turks and Persians.*

Our Carriers followed the first or primary method of arrow release, while the Tsé'kéhne conformed to the fourth or Meditterranean. I am not acquainted with that in vogue among the prehistoric Tsi|Koh'tin'. The above details are given to show to what advantage even the slightest differences in the performance of an act common to all primitive peoples can be turned by the acute observer and reflecting scientist.

Although the scope of this paper, to be consistent with its heading, should be restricted to stone implements, I feel that I cannot well separate bows from arrows in my treatment of the weapons of the chase. As far as my information goes, three varieties of bows, exclusive of cross-bows, obtained among the Western Dénés. Of these two were proper to the Tsé'kéhne, and the third to the Carriers and probably the Tsi|Koh'tin as well.

Fig. 30.

The regular hunting or war bow of the Tsé'kéhne was of mountain maple (*Acer glabrum, Tow.*) and five feet and a half or more in length. The edges, both inner and outer, were smoothened over so as to permit of strips of unplaited sinew being twisted around to ensure therefor the necessary strength. These pieces of sinew were fastened on with a glue obtained from the sturgeon sound, which also did service for all kinds of gluing purposes among each of the three tribes, while still in their prehistoric period. The central part of the bow, which was so thick as to appear almost rectangular, was finally covered with a tissue of differently-tinged porcupine quills.

Great care was taken to obtain a bow-string impermeable to snow and rain. With this object in view, delicate threads of sinew were twisted together and afterwards rubbed over with sturgeon glue. This first string was then gradually strengthened by additional sinew threads twisted round the first and main cord, each overlaying of sinew being

* See Anthropology in 1886, by C. T. Mason, p. 538.

thoroughly saturated with glue. Finally when the string had attained a sufficient thickness for efficient service, it was repeatedly rubbed over with the gum of the black pine (*Abies balsamea*).

Fig. 31.

A less elaborate bow (Fig. 31) is still to this very day in use among the Tsé'kéhne in connection with the blunt arrow already mentioned. It is of seasoned willow (*Salix longifolia*), and being devoid of any sinew backing or other strengthening device, its edges are more angular than those of Fig. 30. Its string consists merely of a double line of cariboo skin slightly twisted together. The specimen figured above measures four feet ten inches.

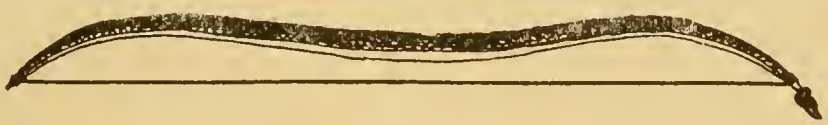

Fig. 32.

The Carrier bow was never much more than four feet in length, and the wooden part of it was invariably juniper (*J. occidentalis*). Instead of being twisted around as in the Tsé'kéhne bow, the shreds of sinew were glued on the back after the fashion of the Eskimo bow, with this difference, however, that in the Carrier weapon the sinew was not plaited. When a layer of thin sinew strips had been fastened lengthwise on the entire back of the bow, it was allowed to dry, after which others were successively added until the desired strength had been obtained. A process analogous to that whereby the Tsé'kéhne bow-string was made was followed in cording the string of the Carrier bow.

It is hardly necessary to remark that both of the aforesaid war and hunting bows disappeared almost simultaneously with the establishment of the North-West Company's posts throughout Western Déné territory. However, it may be said that as late as 60 years ago fire-arms were still *desiderata* among the poorest class of Aborigines.

Here is a Tsé'kéhne crossbow* of modern manufacture. It does duty against small game or for target practice, and is also used by children as a plaything. Although the old men assure me that they have always seen such weapons among their fellow huntsmen, I cannot believe that cross-bows were known to the original Tsé'kéhne. It is much more probable that they have been derived from the band of Iroquois established in close proximity to the territory of the Beaver Indians. My purpose in

* *Tî'kəs î*, "that which darts off," in Tsé'kehne.

mentioning them here is to show that the faculty of self appropriation and adaptiveness which more particularly characterizes the Carrier mind,

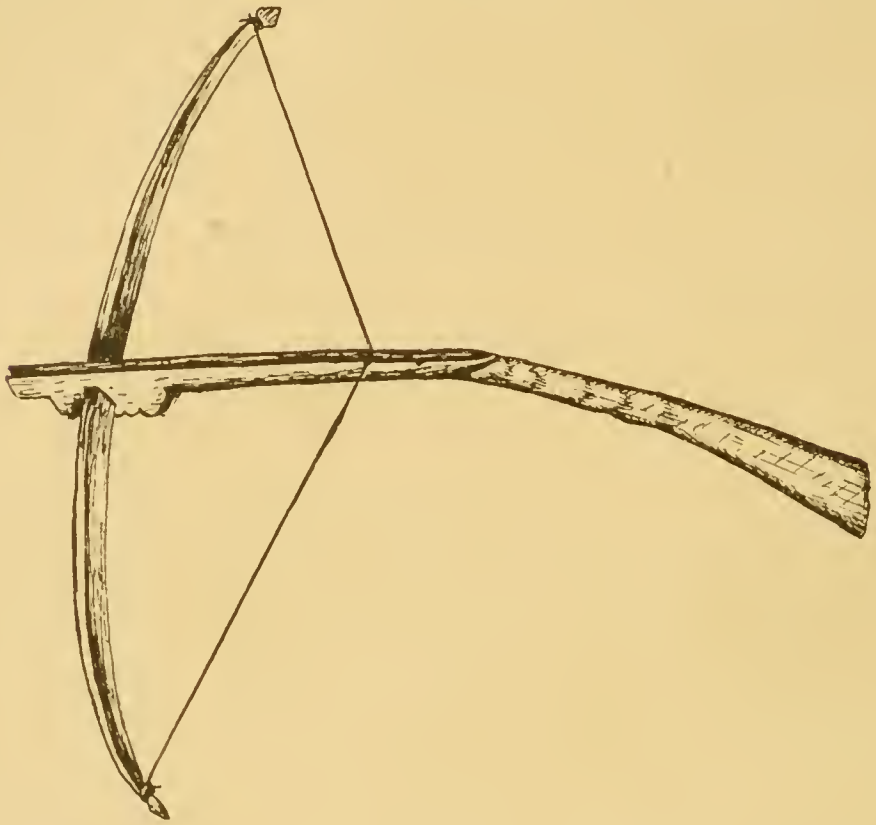

Fig. 33.

is, to some extent, shared in even by the Tsé'kéhne tribe which to this day has little reason to boast of its material progress.

A detail which it may also be worth noting is the mode of holding the bow while shooting. The Carriers, who almost invariably knelt while shooting, held it in a horizontal position, while the Tsé'kéhne used it perpendicularly, one end of the weapon resting on the ground.

To return to stone implements. Besides the arms already described the Western Dénés had recourse, when on the offensive, to five other varieties of weapons; the spear, the dagger, the war club, the temple-lancet or skull-cracker, and what might be termed the counterpart of the modern bayonet.

This latter arm was called *ɔɣthi'-la-dîn'ai** which may be freely translated "fixed at the end of the bow." Its name explains its nature. It was brought into requisition by the warrior or the hunter when too closely pressed by the enemy to shoot, and was used as a spear. Such points were of identical material with that of arrow-heads, *a*, *b* and *c*, fig. 23, and were chipped to the shape of figs. 34 and 35. The latter point is rather ruder in appearance than the average bow-points. Indeed from

* Lit. "bow-end-appended to;" plural. *ɔlthi-la-dînla*, a verbal noun.

the cut giving a side view of it, it would seem that it had been left unfinished. These weapons were inserted in a slit at one end of the bow

Fig. 34.

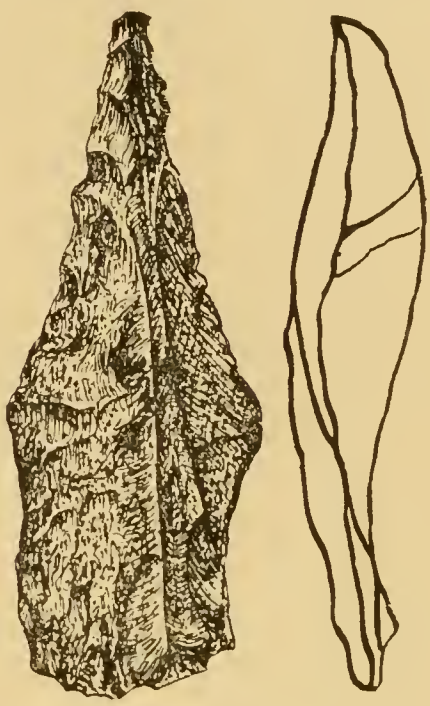

Fig. 35.

(fig. 32) and securely fastened therein with pitch inside and pitch and sinew outside.

Fig. 36, $\frac{1}{3}$ size.

Fig, 37, size.

The spear heads * in nowise differed from the bow-points, save perhaps that they were generally larger in proportions and narrower at the base. Herewith are shown representative specimens. Fig. 37 is, by exception, of felspathic slate. Its shape and make would suggest to the archæologist a comparison with the laurel leaf points of the so-called Solutrian epoch. It is drawn full size. One of its surfaces shows hardly any trace of flaking and almost perfectly flat.

In fig. 38 we have a type of a very different description. It lacks the exquisite finish of the preceding and is double-pointed, so that the base is not easily distinguished from the tip. As may be seen from the outlines of its side, its shape is far from elegant.

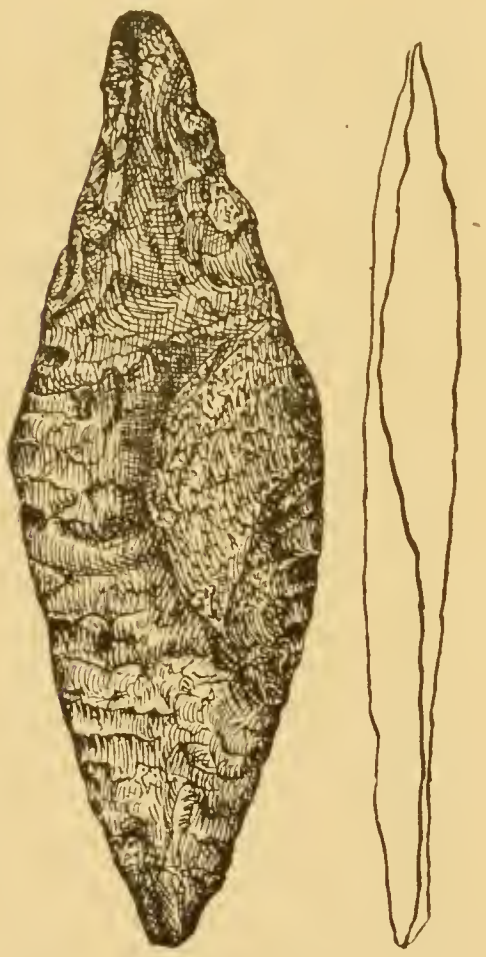

Fig. 38.

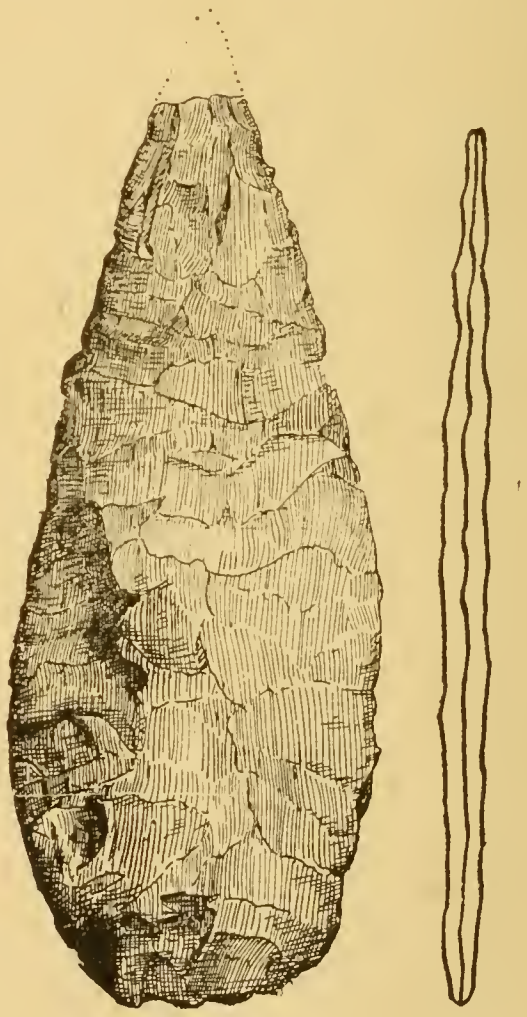

Fig. 39.

All of these spear heads were hafted to a pole five or six feet long pretty much after the mode of connecting the arrow heads with their shaft.

* The heads of these and all missile weapons are called *nûntaï'*. The spear, shaft and point, is named in Carrier *sɔR-thɔz*, or "hook-staff."

To all appearances, the stone daggers* of the prehistoric Dénés were distinguished from their spears by two peculiarities: the shortness of the handle and the greater dimensions of the blade. I would call the attention of antiquarians to the size, shape and finish of the above illustrated dagger blade (fig. 39). Although evidently broken off at the tip end, it is still fully 8½ inches in length and 3 inches in width. Yet it is not more than ⅜ of an inch in its greatest thickness. It has been chipped off to an almost perfectly flat surface, the flakes being as in the Solutrian implements remarkably large and shaving-like. Nevertheless this exquisite relic of prehistoric workmanship has been found, not in the cavern of Solutré, but scarcely two hundred yards from where these lines are written. I may add that it was found on the surface of the ground† and is of exactly the same material as the great majority of Déné arrow heads.

The Déné dagger was carried about hanging from the belt through a a leather thong, as is now done with its modern substitute, the steel poniard.

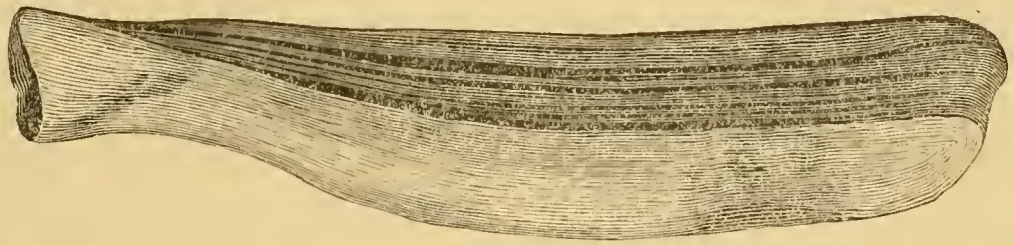

Fig. 40. ⅓ size.

* *Mecyal*, second cat.

† The foregoing had been written for some time when I came across the following passage of Mr. D. Boyle's Archæological Report for 1891 (p. 10) which I had overlooked in the haste of the first reading: "While many specimens (especially flaked ones) found in different parts of the province, may be classed as palæoliths, they have, up to the present time always been found associated in such a way with neoliths that it is impossible to designate them as polæoliths with any degree of certainty. Leaf-shaped "flints" have been picked up that are quite as rudely formed as any from the deepest stalagmite deposits of Europe, but never in situations to suggest that they are other than rough-hewn tools or weapons, which, as such had a purpose in the economy of people who are capable of producing better things. Until we find specimens of this kind, as Dr. Abbot found them in the Trenton gravels, or in some situations isolated from all others, or distinct as to material or coating from specimens of a superior quality in the same neighbourhood, we shall not be warranted in making any distinction relative to time of possible production." It is gratifying to hear of would-be palæoliths being found even in Eastern Canada alongside with neoliths, for this coincidence appears to me a confirmation of the opinion that, in America at least, these divergences of type are suggestive less of distinct epochs than of unequal skill in the craftsmen, or possibly ethnic difference in the race, that produced them. I am persuaded that had Sir. A. Mackenzie examined with the care of an antiquarian the arms of the Western Dénés whom he met one hundred years ago, he would have found both styles co-existing among them.

Apart from the above missile and cutting arms, the Carriers and Babines possessed two other offensive weapons of stone, which they called respectively, R*əl* and *thəl'tə*R.

The first is the war club of which at least two different types existed.

Fig. 41.

Fig. 40 is a club of a grayish basaltic rock which has been treated to a partial polish only, as its surface is naturally smooth. A variety of the same was of bone, or more generally of cariboo horn. Its shape and use were identical, but its length was about double that of the stone weapon. Fig. 41 represents a club of a different and perhaps more common pattern. It is of carefully pecked granite, and though the specimen illustrated is imperfect, the base and knob being wanting, I have had no difficulty in reconstituting it to its original form after other similar weapons I have seen in several parts of our district. To the knob at the small end was fastened a buckskin line which, being firmly wound around the wrist and hand of the warrior, ensured the safe keeping of the weapon amidst the excitement of the fray.

The skull-crackers,* vulgarly called "tommy-sticks," of the plain Indians of the North-West Territories, are well-known even to others than archæologists. I have never suspected their presence among the ancestors of our present Déné population west of the Rockies until last year, when the example (fig. 42) was found in Hwotsu'tin territory. It came as a revelation upon the Carriers, none of whom was found who could do more than guess its use. It is somewhat peculiar in appearance, and its groove is but rudely and irregularly formed.

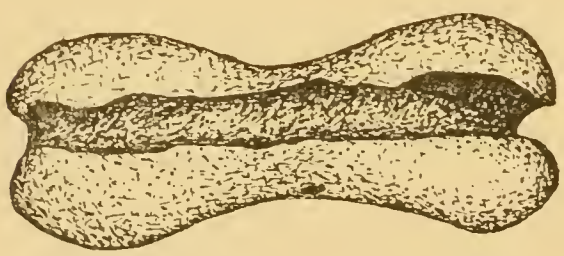

Fig. 42. ⅓ size.

Fig. 43. ½ size.

The innocent-looking little piece of partly polished stone designed in fig. 43 was, in the hands of a Babine Indian, a rather treacherous weapon. It is the temple-lancet or skull-cracker * referred to above. After it had been securely hafted to a wooden handle three or four feet

* *Thəl'tə*R.

long, stone lancet and handle forming, when connected, a scythe-like implement, the warrior—or indeed assassin, as the case may have been—struck therewith his victim on the temple, oftentimes thus causing instant death.

Before bringing to a close this chapter devoted to stone implements, it may not be amiss to say a word concerning the art of stone chipping as practised by the prehistoric Dénés. I remember having read in a publication emanating from a learned society, an elaborate dissertation on this subject wherein the author took great pains to elucidate difficulties which to me appeared to be mainly of his own making. It may be that the rules of the craft varied with the localities and the material employed ; but here, among the Western Dénés, there was no great mystery about the operation.

The material chosen in preference to fashion arrow or spear heads with was loose, broken pieces of the rock such as were found on the surface. Of course these were confined to a few localities only, wherein were situated sorts of quarries which were very jealously guarded against any person, even of the same tribe, whose right to a share in their contents was not fully established. A violation of this traditional law was often considered a *casus belli* between the co-clansmen of the trespasser and those of the proprietors of the quarry.

The first operation consisted in roughly blocking off with a hard stone the pieces of the flint, the removal of which was necessary to obtain a vague resemblance to the intended weapon. Then grasping the flint lengthwise with the closed fingers of the left hand (fig. 44), the arrow-smith carefully pressed off the flakes with an elongated stone held in his right hand, until the desired form and finish were obtained. A piece of buckskin served as a pad to protect the hand against the asperities of the point.

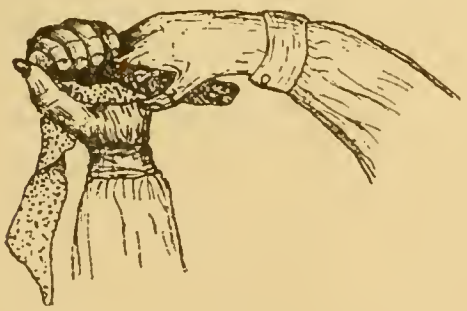

Fig. 44.

I owe these details to an old chief who has been an eye-witness to the operation. I should add that in not a few cases a moose molar tooth replaced the long chipping stone. I know also of a very few points the sharp edges of which have been polished off by friction.

CHAPTER IV.

BONE AND HORN IMPLEMENTS.

Several bone or horn objects formerly in use among the Western Dénés have already been mentioned in connection with stone implements of congenerous nature. As they were mostly weapons or working tools which have long been replaced by iron or steel substitutes, few of them could be illustrated from existing specimens. Such as will be found described in the present chapter are, however, still largely used by the natives, even of the Carrier tribe.

Fig. 45.

They are, with few exceptions, industrial implements. Among those which serve in connection with hunting or trapping, one of the most conspicuous is the *tsa-yu-thej* (beaver-medicine-recipient, or castoreum bottle). As will be seen further on, this same vessel is of birch bark among the Carriers. But the Tsé'kéhne, who are essentially huntsmen and whose country abounds in large game, make it out of a cariboo horn, and adorn (?) it with such primitive designs as may be noticed in fig. 45. Therein the trapper keeps the castoreum which he dilutes either on the steel trap, or in the mud contiguous thereto, in order to decoy the beaver into its ultimate capture.

Of course this mode of trapping is practicable only during the spring or summer months. In the winter, beaver is sought after with nets set in holes cut in the ice a short distance from the rodent's habitation and store. I have elsewhere given an account of this winter trapping which will, perhaps, bear reproduction here. "Once they have found his [the beaver's] lodge, an indispensable preliminary to secure his capture is to discover the exact location of his path or trail under ice. It appears that he follows well marked routes when swimming from, or returning to his winter quarters. These our Dénés easily find out by sounding the ice in different directions with cariboo horns. Their well exercised ears readily discover by a peculiar resonance of the ice where the rodent's usual path lies. So, at a given point, they cut a hole wherein they set their babiche beaver net,"* taking care to plant at a short distance a

* "The Western Dénés," etc., Proc. Can. Inst. vol. vii., p. 131.

stick the upper end of which is provided with little bells—the counterpart of the beaver nails and pebbles which did duty in prehistoric years. To this upright stick the side ropes of the net are attached in such a way as to be ready for use when the game is to be ensnared. "Then the hunter (should I not say fisher?) proceeds to demolish the beaver's lodge, in order to drive him off. Should the game not be found there the same operation is repeated at his adjoining provision store. When the undulations of the water tell of his presence therein, he is frightened away to where the net is set. Supposing that the beaver is swifter than his hunter and reaches the net before the latter, the efforts he will make to extricate himself therefrom will agitate the small bells before mentioned, and the hunter will immediately make for the hole and draw him out before he has time to cut himself clear of the net."*

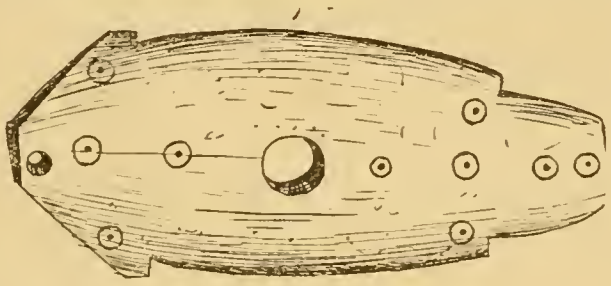

Fig. 46.

Fig. 46 represents the *mas*, a bone device indispensable to the efficiency of the beaver net. It is attached to the end of the net which is laid out at the opening in the ice wherein it floats on the water. The side strings of the net are passed through the centre hole of the bone piece (mas) and thence connected with the little bells at the top of the outstanding stick, so that by pulling them up, the farthest end of the net, which is under ice, will be drawn back to where the mas is secured, and thereby the game will be bagged, as it were, and speedily killed on the ice. These bone pieces affect divers forms, several of which are symbolical. Thus the mas shown above, is intended to represent a beaver. It will be remarked that the design is highly conventionalized. Yet, even a child (of Déné parentage, of course) will recognize at once its significance.

Barbed harpoons† such as those shown in the accompanying figures are resorted to when the Déné is out beaver hunting—not trapping or snaring,—that is in such cases as when the beaver is met with free of any trap or net. Until a short time ago those beaver harpoons were made of cariboo-horn; but to-day implements of identical shape wrought out of steel files or pieces of iron have almost entirely superseded the

* *Ibid*, p. 132.

† *ʒta-t'sən*, "lip or barb-bone."

original horn weapon. To-day, as formerly, they are securely fastened to a handle three or four feet long, wherewith they are launched at the

Fig. 47. ½ size.

game much as would be done with a regular lance. The shaft is intended to secure greater impetus and efficiency to the weapon. The specimen illustrated by fig. 47 is a find, and is therefore more ancient

Fig. 48. ½ size.

than that shown in fig. 48 which is quite modern. A comparison between these implements and those of similar intent in use among widely different races of Indians all over North America cannot fail to elicit the remark that the same needs create the same means. *

In the act of dressing hides several bone or horn implements are still used among the Western Dénés. These are the fat-scraper, the hair-scraper, the bone-awl, and the skin-scraper.

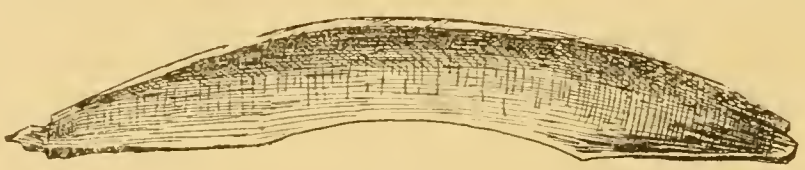

Fig 49.

The first† is made of a split cariboo horn (fig. 49) and, as its name indicates, it serves to scrape off the fat adhering to the fresh skin. This fat is received in the concave part of the implement and thence transferred to a bark vessel close by. In the form above delineated, it is more of a Tsé'kéhne than of a Carrier tool, and as such it does service more particularly in the treatment of marmot (*Arctomys monax* and *caligatus*) and wild goat (*Aplocerus montanus*) skins.

The Carrier equivalent therefor generally consists of the socket end of the shoulder blade of the cariboo, left almost in its natural state.

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* *See* Ann. Rep. Canad. Inst. 1888, p. 58, figs. 100, 101.

† *Pe-tha-ɔtzo*, "wherewith the flesh-side is scraped" (of a liquid or fat substance): fourth category of nouns.

This implement is used in connection with grease or fat scraping of any description.

Fig. 50. $\frac{1}{5}$ size.

Once the hide has been freed of most of its fat and blood, it is soaked in cold, and then in warm, water, after which one of its extremities is lashed up around the smaller end of a stout pole leaning on any kind of support, a wall, a fence, etc. The hair is then removed by energetic action on the skin hanging down over the pole with a scraper * formed of the tibia of a cariboo (fig. 50). By reason of the peculiar tenacity of the hair, moose skins are now operated on with a short curved steel knife. But the bone instrument shown above is still very extensively employed in connection with any other kind of hair scraping.

After having been thoroughly rubbed with the brain of the animal, its skin is next extended within a wooden frame as is practised by most tribes of Aborigines. The holes near the edges through which the line

Fig. 51.

Fig. 52.

which fastens it to the frame is passed, were formerly and are still in some localities, pierced with bone awls † identical in form and material with those occasionally found in mounds. They are of the fibula bone of the cariboo, or, as in fig. 52, of the black bear. The latter are more common among the TsiɬKoh'tin. In times past such awls were resorted to whenever any skin or bark perforations, such as are incident to the art of canoe building or sewing bark vessels, were found necessary. They are now obsolete, steel having almost entirely replaced bone in the fabrication of any such tools. Yet the specimens illustrated above were in use among the Carriers and the TsilKoh'tin immediately prior to their being given me.

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* *Pe-na-əlqé*, "wherewith one scrapes off" (*i.e.*, hair); fourth category.

† *Ɣkwət-tsəl*, "knee-bone awl"; third category.

The object in view while spreading the skin in its wooden frame is to remove its "mack" or inner cuticle. This is accomplished by means of bone scrapers,* which are everywhere essentially the same, but whose form or even material varies according to the tribe by which they are used.

Fig. 53. ⅓ size.

Thus the Tsiɬkoh'tin scraper (Fig. 53) is of bear bone and wedge-like in form. The skin wrapping shown in the cut is quite often wanting.

Fig. 54. ½ size.

The Carrier scraper (Fig. 54) is of cariboo bone and shaped somewhat like a chisel. Its main peculiarity consists in the teeth cut in its edge to prevent its slipping too easily over the skin and ensure better gripping power. Identical implements are at times found as relics of extinct races in many parts of the northern American continent, and I still remember how the perplexity as to their probable destination evidenced through the lines of an antiquarian, who some years ago was describing one of them, brought home to me the advantages enjoyed, even from an archæological standpoint, by persons actually passing their life among the aborigines.

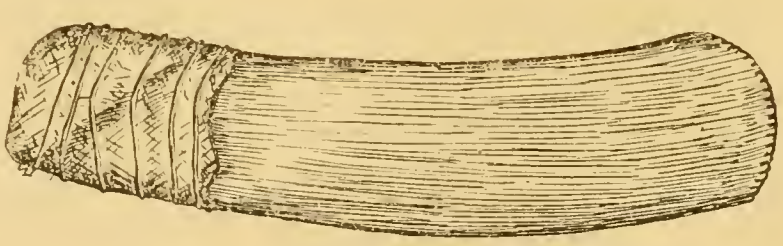

Fig. 55. ½ size.

Among the Tsé'kéhne the skin scrapers are of cariboo horn, thinned and reduced to the form of that delineated in fig. 55. A piece of buckskin wrapped around the end held in the hand facilitates the handling of that rather awkward implement. The serrated edge of the Carrier scraper is also reproduced by the Tsé'kéhne. Or indeed it is quite as likely that the Carriers have learned this peculiarity from the Tsé'kéhne, who in their turn have borrowed it from the Crees and other Algonquian

* *ɣtha-nkwɔt*, "it scrapes (by pecking) the flesh side."

tribes of the East, all of which observe it in making their skins crapers, while the TsiɬKoh'tin, who are the most distantly situated from them, seem to be ignorant of it.

All of these scrapers also do service in the process of skinning animals as means of separating the hide from the flesh.

If we now pass from bone implements connected with hunting to such as are laid under contribution as means of furthering the fishing industry, we may note in the first place the *ta-krét* * or fish harpoon (fig.

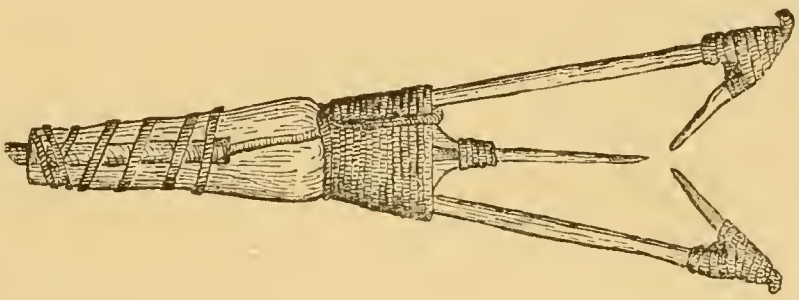

Fig. 56. ⅛ size.

56). The cut renders a detailed description of it unnecessary. The only wooden parts are the shaft and the socket, round which is wound the skin line which fastens the two side-hooks of the harpoon, while it secures in its proper place the middle prong. The hook pieces are fastened with sinew. An archæologist fond of comparisons cannot fail to notice the resemblance of this weapon to its Eskimo equivalent such as illustrated in fig. 453 of Dr. F. Boas' "The Central Eskimo." † The ta-krét serves to dart a large species of white-fleshed salmon (*Oncorrynchus chouicha*, Walbaum), called *kes* by the Carriers and *qes* by the TsiɬKoh'tin. Nowadays these implements are mostly of iron or steel; but their shape has remained unaltered.

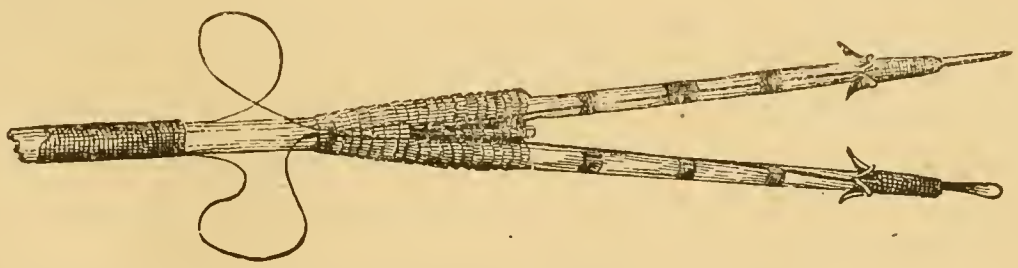

Fig. 57. ¼ size.

The TsiɬKoh'tin spear salmon with a harpoon of a totally different pattern (fig. 57). It is double darted, and so made that upon fastening in the flesh of the fish, both darts detach themselves from the forked shaft to

* "Lip-dart," by allusion to its mouth-like appearance.

† Sixth Ann. Rep. Bureau of Ethnology, 1884-85.

which they are secured by means of a plated raw-hide line. The whole detachable points of this implement were originally of mountain sheep horn ; but in modern specimens the tip is generally of iron and occasionally of copper, the barbs only being of horn.

Both the Carrier and the Tsi|Koh'tin harpoons are hafted to shafts sometimes as much as 12 or 15 feet long, so as to render them serviceable from the top of rocks or precipitous river banks emerging from the rapids where that species of fish is wont to congregate.

Implements of that size are designed exclusively for salmon fishing. For smaller fish, besides the nets, which will be described in their proper place, the Carriers have recourse to a bone or steel harpoon of analogous model with that of fig. 56, but reduced in dimensions and hafted to a short handle. If in the winter time, bait is used as a means of attracting the fish. Having cut in the ice a hole of sufficient diameter to observe the movements of the trout underneath, the Carrier drops and gently

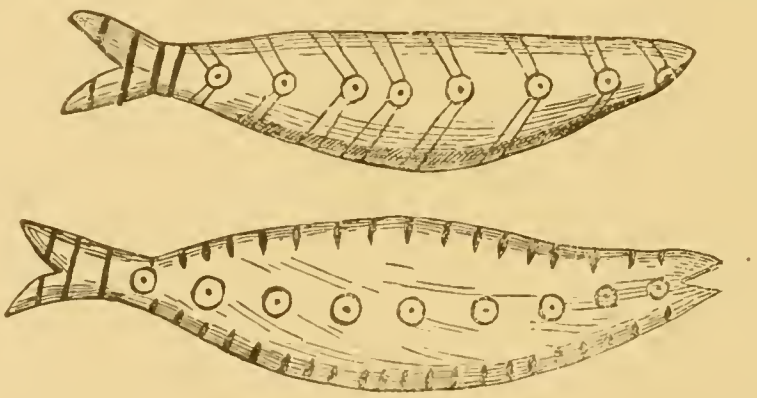

Fig. 58.

oscillates in the water bone imitations of Coregone fry (fig. 58), hanging through a sinew line from a wood or bone piece held in the left hand. Upon biting the bait, the fish is speedily speared with the above mentioned harpoon.

Here (fig. 59) we have a fishing implement which, though of a rather primitive style, yet requires but little explanation. The lancet or pin-like part of the hook* only is of bone, while the shank is of wood. This implement is drawn natural size. In remote localities, during hunting expeditions away in the woods, it is found to this day very serviceable.

A fishing device less modern in appearance is shown in fig. 60. It is called by the Carriers *thé-sateñ* a word which cannot be better translated than by "lying on the bottom," though the actual equivalent of that phrase would be *thé*R-*əsthan*. A very small fish is used as bait and fastened in

* *Qɔs ;* prim. root.

this wise to the implement; the whole of the bone pin including the sinew line to which it is attached is passed through the anal part of the fish

Fig. 59.

Fig. 60.

and then one-half of it is inserted lengthwise through the body of the fish commencing from the point of initial insertion of the sinew line to the head, after which the whole is dropped in the water and held as in the case of the bone coregone bait. The larger fish, generally the loche or turbot (*Lota maculosa*) which is very voracious, overlooks the other half of the implement left bare, and by gulping down the small fish gives warning to the fisherman, who instantly pulls up the whole, thereby sinking the bone pin in the gills of the large fish which is thus easily secured.

As a rule, the small end bones of the loon's wings, or occasionally even young beaver ribs, are the material chosen to make the two last mentioned implements. The same probably served also to fabricate the needles of the prehistoric Dénés. But none of them is now extant, and this may be a mere conjecture.

Before proceeding further, a word about the species of fishes more extensively sought after by the Carriers and the Tsi|Koh'tin may not be out of place. They are of course very numerous, but king among them all is the salmon, and of the five species which are now known to ascend their rivers, the suck-eye (*Oncorhynchus nerka*, Walbaum) or *tha-llo* * is by far the most important either on account of its economic value or of the prodigious numbers of its annual run. Next in abundance and

* "Water-fish."

importance as an article of diet is the large white flesh salmon or *kes* which has already been mentioned. These two species are common to most of the streams within Carrier, Babine and Tsiɬkoh'tin territory, though the latter avoids not a few minor tributaries of the large rivers. One is particular to Babine lake and outlet—it is the hump-back salmon* (*O. gorbuscha*, Walb.) It is not of much value. The two other species, *thestlé*† and *ta-tzəʀ*‡ in Carrier are quite plentiful in such streams as discharge their waters through the Skeena river; but according to local observations they make their appearance in Stuart's Lake and immediate outlet only when the next run of the tha-llo is to be extraordinarily large. As far as I can judge the *thestlé* is the *O. keta* of Walbaum, such as described by Jordan and Gilbert;§ but I can find no specific name for the ta-tzəʀ, whose native name is an exact translation of the scientific word for all the Pacific Salmons: ὄγκος, hook; ῥύγχος, snout; Carrier: *ta*, snout (and lip); *tzəʀ*, hook.

To the above should be added the *késəl*‖ or land-locked salmon (*O. Kennerlyi*), which is much appreciated by the native palate and captured mainly with the help of fish traps or *'kuntzai*. It is however inferior in point of economic importance to the great lake trout (*Salvelinus namaycush*, Walb.) called *pît* by the Indians and which is extensively sought after either during the autumn months or the cold season. In the former case it is quite frequently dried and cured as the red salmon or thal-o. The other trouts to be found in Déné lakes or rivers are the common trout (*Salmo purpuratus*, Pallas) and the bull trout (*Salvelinus malma*, Walb.) There are also two species of whitefish, the *Coregonus clupeiformis* (Mitch.) and the *Coregonus quadrilateralis* of Richardson, which in some localities are caught in such large quantities that many thousands are usually kept frozen for use during the winter.

The above are, of course, the best fish available here. But as the child of the forest has not always the choice of his diet, he must more often than once content himself with such carps or carpiodes, such suckers or catastomidæ as may chance to venture too near his drag-net. These seldom fail him. Their name is legion, and I will not be so rash as to attempt a nomenclature of them.

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* *Stəm'oñ*, a word which to a Déné ear appears quite foreign.

† A noun of the second category.

‡ "Lip (and snout)-hook."

§ Synopsis of the Fishes of North America by D. S. Jordan and Ch. H. Gilbert, Washington, 1882.

‖ Almost equivalent to "small *kes*" or white flesh salmon.

I did not mention the sturgeon (*Accipenser transmontanus*, Richardson), because, although it is a welcome visitor to our lakes, its visits are too rare and far between to entitle it to serious consideration in this connection. It is caught in large meshed nets.*

To join the two extremes, I will add to the sturgeon, the largest of our fresh water fishes, the *théɂmək*,† a very small fish which I think is not known to Ichthyology. It frequents a few little lakes only, and is taken with scoop-nets during the few mild days which usually interrupt the severity of our winters. The quantity of that fish brought home after one single afternoon's absence from the village is sometimes really enormous.

To be complete I should have noticed among bone implements serving fishing or trapping purposes, the *ətέ*,‡ or ice-breaker. This is, however, a mere pointed cariboo horn, which tends to disappear as a working tool, being gradually replaced by a piece of iron or steel, whenever this can be obtained.

There is a horn wedge which, even at the present day, serves to split the slender rods of which are made the *'kuntzai* or fish baskets, which shall be described in the chapter devoted to wood implements. As in most implements requiring hard material, cariboo horn is chosen to make these wedges.

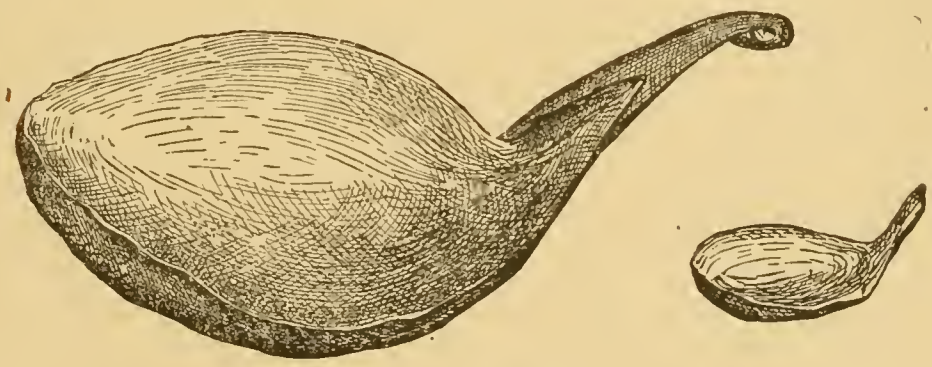

Fig. 62. ¼ size.

The above figure requires no explanation. A glance at the horn ladle

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* The Carrier name of the sturgeon is *je-tco*, "big-fish."

† A root of the second category, the first syllable of which refers to the lake bottoms from which these fishes seem to suddenly emerge.

‡ *ʒtέ* means "horn," and is used to designate even steel ice-breakers. The ancient name for them is *tzoñtziɂ* in Carrier which is evidently identical with the present *tzoroñtziɂ* of the Tsiɢoh'tin.

and spoon therein represented will show that our Western Dénés' handiwork is of a very poor grade indeed compared with that of the elaborately carved Haida, Tsimsian or Tlingit spoons. The only attempt at

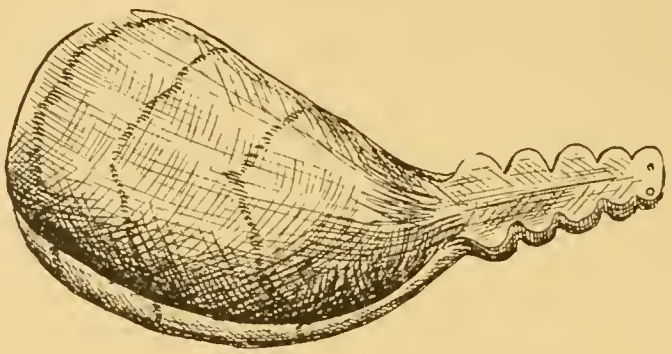

Fig. 63. ¼ size.

design or ornamentation of any kind appears in the Tsé'kéhne spoon or ladle (fig. 63). Genuine Carrier utensils of this class, which are either of wood or of horn, are even plainer than those above illustrated. Evidently our Dénés have no eye for the beautiful. In all cases of horn spoons the material is mountain sheep horn.

The manufacture of such household implements necessitates the possession of no extraordinary amount of skill. After the horn has been split in two equal halves, a spherical, smooth-surfaced stone is heated, and to expand the too contracted sides of the horn they are applied thereon and gently pressed out, a layer of pitch having previously been spread over the stone so as to give consistency to the material of the spoon and prevent its artificially distended parts from returning, when cooled, to their original shape. The finishing touches are then given with the carving knife.

Keeping within the same class of industrial bone implements, we come on the bark peelers * and the cambium scrapers.† Both of these are in great demand every recurring spring for the purpose of extracting for food the cambium layer of the shrub pine (*Pinus contorta*). Their name sufficiently describes their use. Below is the Carrier type of both peeler and scraper, which, it should be remarked, are oftentimes much larger than those after which fig. 64 has been drawn. In fig. 65 we have a double-edged scraper, which, though known among and sometimes used by the Carriers, is more frequently seen among the Tsé'kéhne. The various styles of these useful implements are all of cariboo horn. The

* *Enił'qǫl*, "it penetrates by tearing," a verbal noun.

† *Eltzo*, "that which scrapes," verb. noun.

shavings-like cambium thereby obtained is much relished by the natives,

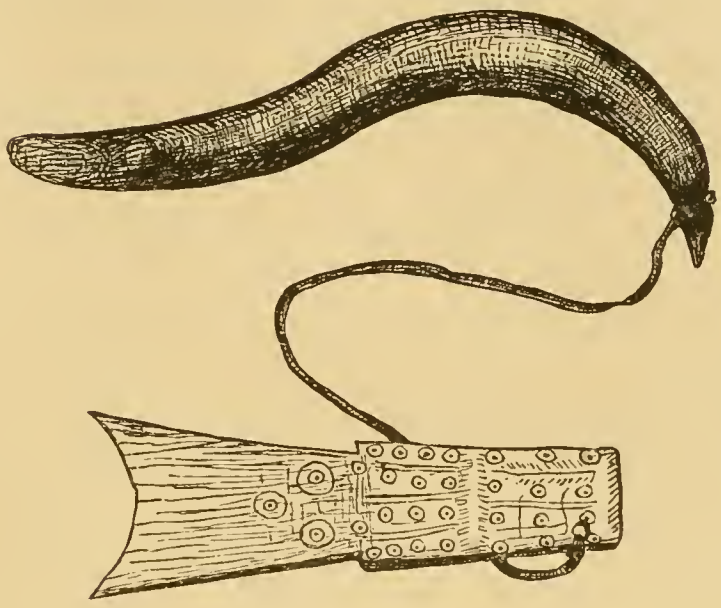

Fig. 64. ½ size.

who even collect it at times for the purpose of drying and keeping for use during the winter months.

Fig. 65. ½ size.

If from the indispensable or useful we pass to the agreeable, the gambling sticks formerly used among our aborigines may claim our attention. Here, again, we find the elegantly-carved gambling sticks of the West Coast tribes replaced by simple polished pieces of lynx or other animal's bones without any particular design, and with the mere addition to one of the pair of the sinew wrapping necessary to determine the winning stick. The Babine specimens (fig. 66) are rather large and must prove awkward in the hand of the gambler. But they have the reputation of being preventive of dishonesty, if distinctions between the honest and the dishonest can be established in connection with such a pastime as gambling. Such of these trinkets as are hollow have generally both ends shut with a piece of wood, and contain minute pebbles and gravel which produce a gentle rattling sound in the hand of the native, much to his own satisfaction.

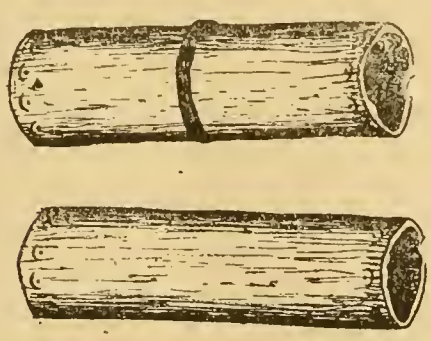

Fig. 66. ½ size.

Fig. 67 represents the Tsi[Koh'tin and fig. 68 the Tsé'kéhne equivalent of the Babine gambling sticks. It will be seen from the latter that the Tsé'kéhne, who are the most primitive and uncultured of the three tribes whose technology is under review, are again the only people who in this connection, as with regard to their spoons, have made the merest attempt at bone carving.

Fig. 67.

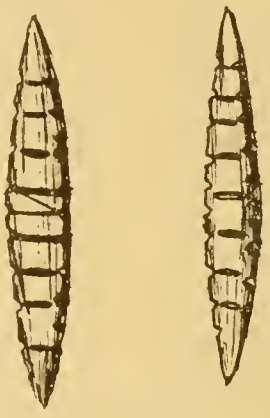

Fig. 68. ½ size.

The game played with these bone pieces is, I think, too well known to demand a description. The jerking movements and passes of hands of the party operating therewith, as well as the drum beating and the singing of the spectators or partners, are practised among most of the Indian races, especially of the Pacific Coast, which have occupied the attention of American ethnologists. The Abbé Petitot says in one of his latest publications* that this game is adventitious among the Eastern Dénés who have borrowed it from the Crees. This remark is no less apposite with regard to their kinsmen west of the Rocky Mountains. Although no other chance game possesses to-day so many charms for the frivolous Western Dénés, the old men assure me that it was formerly unknown among their fellow countrymen. That their testimony is based on fact, the very name of that game would seem to indicate, since it is a mere verb in the impersonal mood: *nət'sə·a*, "one keeps in the hand while moving," and is therefore of the fourth category of Déné nouns. The word for "gambling sticks," such as used in connection with nət'sə·a, is *nə'ta*, which is the same verb under the potential form and means "that which can be held in the hand." Any of the surrounding races, Tsimpsian, Salishan or Algonquin, may be held responsible for its introduction among the Western Dénés, for they are all exceedingly fond of it.

The original counterpart of the modern nət'sə·a was the *atlih*,† which

*I think it is in his book *En route pour la Mer Glaciale, Paris*, 1888.

† May be translated by "Gambling" in a general sense.

in times past was passionately played by the Carriers, but is now altogether forgotten except by a few elder men. It necessitated the use of a quantity of finely-polished bonesticks, perhaps four or five inches long, of which a correct idea may be gathered from fig. 336, illustrating Niblack's "The Indians of Southern Alaska."* These bones were called *altć*, a root word of the second category, implying much greater antiquity than that of the nə'ta

Speaking of atlih, a tradition which has some bearing thereon comes up for a share in the reader's consideration. If of no interest to the archæologist, it will serve a sociological purpose and may have the advantage of furnishing us with a *peinture de mœurs*, as the French have it. Here it is.†

"A young man was so fond of playing atlih that, after he had lost every part of his wearing apparel, he went so far as to gamble away his very wife and children. Disgusted at his conduct, his fellow villagers turned away from him and migrated to another spot of the forest, taking along all their belongings, and carefully extinguishing the fire of every lodge so that he might perish.

"Now this happened in winter time. Reduced to this sad fate, and in a state of complete nakedness, the young man searched every fireplace in the hope of finding some bits of burning cinders, but to no purpose. He then took the dry grass on which his fellow villagers had been resting every night and roughly weaved it into some sort of a garment to cover his nakedness.

"Yet without fire or food he could not live. So he went off in despair without snow-shoes, expecting death in the midst of his wanderings.

"After journeying some time, as he was half frozen and dying of hunger, he suddenly caught sight in the top of the tall spruces of a glimmer as that of a far-off fire. Groping his way thither, he soon perceived sparks flying out of two columns of smoke, and cautiously approaching he came upon a large lodge covered with branches of conifers. He peeped through a chink and saw nobody but an old man sitting by one of two large fires burning in the lodge.

"Immediately the old man cried out: 'Come in, my son-in-law!' The young man was much astonished, inasmuch as he could see nobody outside but himself. 'Come in, my son-in-law; what are you doing out

* Rep. U. S. Museum, 1888, plate lxiii.

† It must be remarked that in the version the most in vogue among the Carriers, the beginning of this legend is very different from that adopted here after Julian *ɣtetsâ-niya* (he walks ahead) of this place, Stuart's Lake.

in the cold?' came again from the lodge. Whereupon the gambler ascertained that it was himself who was thus addressed. Therefore he timidly entered, and, following his host's suggestion, he set to warm himself by one of the fires.

"The old man was called *Nə-yəR-hwolluz* * because, being no other than Yihta,† he nightly carries his house about in the course of his travellings. 'You seem very miserable, my son-in-law; take this up,' he said to his guest while putting mantlewise on the young man's shoulders a robe of sewn marmot skins. He next handed him a pair of tanned skin mocassins and ornamented leggings of the same material. He then called out: 'My daughter, roast by the fireside something to eat for your husband—he must be hungry.' Hearing which, the gambler, who had thought himself alone with Nə-yəR-hwolluz, was much surprised to see a beautiful virgin‡ emerge from one of the corner provision and goods stores§ and proceed to prepare a repast for him.

"Meanwhile, the old man was digging a hole in the ashes, whence he brought out a whole black bear cooked under the fire with skin and hair on. Pressing with his fingers the brim of the hole made by the arrow, he took the bear up to his guest's lips, saying: 'Suck out the grease, my son-in-law.' The latter was so exhausted by fatigue that he could drink but a little of the warm liquid, which caused his host to exclaim: 'How small-bellied my son-in-law is!' Then the old man went to the second fireplace, likewise dug out therefrom a whole bear and made his guest drink in the same way with the same result accompanied by a similar remark.

"After they had eaten, NəyəRhwolluz showed the gambler to his resting place and cautioned him not to go out during the night. As for himself, he was soon noticed to leave the lodge that and every other night; and, as he came back in the morning, he invariably seemed to be quite heated and looked as one who has travelled a very great distance.

"The gambler lived there happily with his new wife for some months. But his former passion soon revived. As spring came back, he would take some alté in an absent-minded way and set out to play therewith all alone. Which seeing, his father-in-law said to him: 'If you feel

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* Lit. "he-carries (as with a sleigh)-a-house." The final *hwolluz* is proper to the dialect of the Lower Carriers, though the tale is narrated by an Upper Carrier, which circumstance would seem to indicate that the legend is not, as so many others, borrowed from a Tsimpsian tribe.

† *Ursa major.*

‡ *Sak-əšta*, "She sits apart."

§ See the Chapter on the Dené habitations.

lonesome here, my son-in-law, return for a while to your own folks and gamble with them.' Then handing him a set of alté and four *tətquh*,* he added: 'When you have won all that is worth winning, throw your tətquh up over the roof of the house, and come back immediately. Also remember not to speak to your former wife.'

"The gambler then made his departure, and was soon again among the people who had abandoned him. He was now a handsome and well-dressed young man, and soon finding partners for his game he stripped them of all their belongings, after which he threw his tətquh over the roof of the lodge. He also met his former wife as she was coming from drawing water, and, though she entreated him to take her back to wife again, he hardened his heart and did not know her.†

"Yet, instead of returning immediately after he had thrown his tətquh over the roof, as he had been directed to do, his passion for atlih betrayed him into playing again, when he lost all he had won. He was thus reduced to his first state of wretched nakedness. He then thought of NəyəRhwolluz, of his new wife and his new home, and attempted to return to them, but he could never find them."

Fig. 69. ¼ size.

A third chance game was proper to the women and was played with button-like pieces of bone. It was based on the same principle as dice, and, in common with atlih, it has long fallen into disuse. Its name is *atiyéh*.

The three bone implements which remain to be described have likewise disappeared from among the Carriers to whom they were proper. Thus fig. 69 shows a *tél̨ni* or ceremonial whistle, which could not at present be identified by one-twentieth of the living Carrier population. It is made of the larger wing bone of the swan, notched near, and slit at, one end exactly as shown in the above figure and without the insertion of any mouth-piece. On great ceremonial occasions, the notable or native nobleman, who was privileged to accompany his dance therewith, kept it constantly in his mouth unsupported by the hand, and from time to time extracted therefrom loud, shrill notes, which added not a little to the liveliness of the scene.

The object represented by fig. 70 differs but little from the preceding, the material being identical and the form almost so. But its use and destination are widely different. It is a *t'sən-'kuz* or "bone-tube"

* A long throwing rod which serves to play another game. It will be figured and explained further on.

† In the biblical sense of *Cognovit*.

through which Carrier and Babine girls attaining the age of puberty had to drink under pain, it was said, of contracting dreadful throat diseases should they attempt to quench their thirst by helping themselves im-

Fig. 70. ½ size.

mediately from the water vessel as was done by common folks. This trinket was constantly carried about, hanging from the sinew and down necklace usually encircling the neck of such pubescent maidens, also as a specific against malign influences.

Fig. 71. ½ size.

Closely connected therewith was the double-pronged comb shown in fig. 71. It was worn in the hair and likewise connected with the medicinal (?) necklace through a long, loosely-hanging string adorned with beads, or, in primordial times, dentalium shells or other small articles of native ornament. Its use was not restricted to pubescent girls, but this comb or *tsi-ltsət*,* as it was called, was also common to young men attaining maturity. It should perhaps be remarked that in this latter case the instrument was of wood, not of bone. "Comb" is rather a misnomer when applied to such an object which served merely to scratch one's head with, as immediate contact between the fingers and the head was then reputed productive of fatal diseases.

Apropos of diseases it may be mentioned that bleeding as a surgical operation was, and still is, frequently resorted to by our Western Dénés. So far as my information goes, there was in pristine times no surgical instrument such as an equivalent of our lancet employed in this con-

* "Head-scratches," verb. noun.

nection. It would seem that the operation was formerly performed either with a bone needle or awl, or more commonly with a sharp-edged stone arrow head.

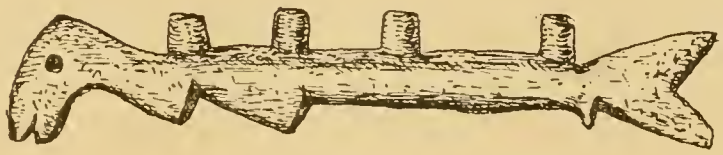

Fig. 72.

Fig. 72 illustrates the change brought in the native huntsman's economy by modern civilization. It is a little piece of bone carved to the shape of a fantastic being, half animal (viz. coyote), half fish, on the back of which little excrescences have been left, the object of which is to hold as many metallic caps for use with a shot gun. This little trinket is fastened to the string of the powder-horn or to that of the shot pouch. It is more commonly cut out of a piece of thick leather without any attempt at design.

CHAPTER V.

Traps and Snares.

FISH TRAPS.

Judged by their staple food, the Carriers and the Tsi|Koh'tin are maritime or coast tribes, since they mostly rely upon the annual run of salmon for their sustenance during the whole year. But, owing to the topography of their country and their peculiar environments, their mode of securing their supply of the fish materially differs from that adopted by the coast Indians. Nay more, even among themselves the process varies according to the localities and the nature of the fish stream. It may be broadly stated that at least seven different devices are resorted to, which I shall presently endeavour to explain.

In the first place one should not forget that the salmon almost exclusively referred to in the present paragraph, that on which the two tribes named above mainly subsist, is the so-called Fraser River salmon (*Oncorhynchus nerka*, Walbaum). It is exceedingly gregarious in habits and usually plentiful. As will soon be seen, these two peculiarities are taken occasion of by the natives to facilitate its capture.

Where it is practicable the Kamstkadals' method of salmon-fishing is followed. This consists in staking across the river in its whole width and leaving for the fish only narrow passages ending in long, funnel-shaped baskets from which escape is impossible. Owing to the importance of this industry, some detailed explanation of the whole process will not be out of place.

At intervals of forty or fifty feet heavy posts are driven as solidly as possible in the bed of the stream from shore to shore, and on these will depend the strength of the whole structure. As an additional guarantee against the action of the current, as many props or braces are sunk slanting down stream and secured against the upright posts close to the water line. In this and all similar cases the fastening material consists of willow, high cranberry bush or spruce sapling wattle. Finally, heavy poles, as long as can be found, are laid transversely on the forks formed by the intersection of the piles with their props, and the result constitutes what may be called the skeleton of the weir. The intervals between the upright posts are afterwards filled in by poles driven down in the bed of the river, and as these are placed on the upstream side of the

long railing already mentioned, no artificial fastening therewith is required. The weir is then ready to receive the fishing apparatus, which consists of the hurdles,* the bottle-like baskets *nazrwət*† and the narrow terminal baskets, Kəs.‡

The hurdles are made of different sizes, according to the place they are to occupy. They are simply barkless spruce switches, held slightly apart by a few transversal sticks laid against, not entwined with, the trellis work, and there secured by being wattled with wattup or spruce root. The larger number of these hurdles serve to line the upstream side of the weir, thereby closing every possible issue through it, while with the rest are constructed corral-like enclosures guarding the mouth of the baskets, as shown in the accompanying diagram (fig. 73). The

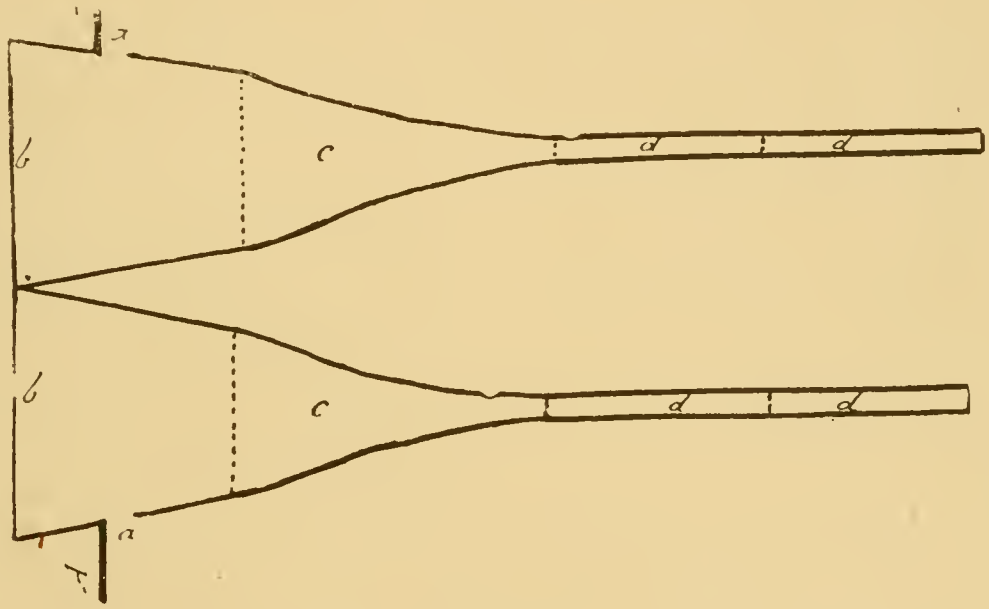

Fig. 73.

entrance to these corrals, and therefore to the trap, is at *a*, and is generally half a foot wide. *A* stand for parts of the barrier or weir. The salmon upon stealing in finds its way up blocked at *b*, and by a sidewise evolution comes in sight of the long conduit prepared for it in the shape of the nazrwət or main basket *c*, together with the narrow terminal cylinders *d*. With a view of liberating itself from the hurdle enclosure, it swims down as far as the terminal cylinders, which, being too narrow to permit of its turning back, thus determine its capture. Others following will soon pack even the broader end of the nazrwət to such an extent that oftentimes no moving room is left. The dotted outlines in

* *Tcə-st'ɲu*, a contraction of *tcən-st'ɲu*, "stick-twined."

† A contraction of *nanîzrwət*, "cylindrical at the mouth (and long in body)."

‡ Prim. root. Means any long, slender and smooth-surfaced appendage, as a handle, a stem. So named because it is considered as the handle of the funnel-like basket or *nazrwət*.

the above diagram represent the end of each basket which, it is useless to add, is left opened so as to afford a free passage for the fish. Such traps are generally constructed in pairs as is shown above.

Instead of shutting with trellis work the furthest end of the last Kəs or narrow cylinder, some add thereto a large rectangular box-like reservoir provided with a conical conduit or entrance (fig. 74) tapering into the box so as to preclude the possibility of the fish escaping once it has entered and found the liberty of movements it lacked while in the narrow baskets. Therein the salmon crowd in such numbers that they soon get packed as sardines in a box and finally squeeze themselves to death.*

Fig. 74.

This trap is efficient at night only, and when the large terminal basket just mentioned is wanting, the nazrwət has to be watched lest the fish remaining at its mouth eventually make good their escape. At least two Indians go every morning and lift up with wooden hooks (fig. 75) such parts of the trap as cannot easily be reached by the hand and carefully empty its contents into their canoe. The Kəs are but temporarily connected, being detachable at will Two or three, or in extreme cases as many as four, are ordinarily added to the nazrwət.

Fig. 75.

The nazrwət measures at least 15 feet in length and as much as 6 or 8 feet in its greatest width,† while its narrow end is not more than 6 inches wide. Uniform with the latter is the Kəs, which is of variable length, 10 feet being probably the minimum and 16 the maximum.

Clear pieces of Douglas fir *(Pinus murrayana)* are the material chosen in the preparation of these fish traps and of all those which remain to describe. Once a suitable fir trunk has been split into portable sizes the wood is allowed to remain a few days in the water, after which it is converted with the help of the bone wedge (fig. 75 *bis*) into long and very slender rods which are then shaved smooth with the knife and assigned to their respective places in the structure. The encircling pieces are of spruce (*Abies nigra*) and are wattled to the longitudinal rods with the usual wattup or spruce root.

Fig. 75 *bis.*

* These reservoirs are called *yuta-sKai*, a contraction of *yutat-əsKai*, "it (recipient) lies down stream."

† This, of course, varies with the depth of the stream.

The nazrwət and its correlative, the Kəs, are exclusively designed for the capture of the salmon. A second fishing device, less restricted in its use, is the *'kûn-tzai.** It works on the same principle as the *yutasKai* or terminal fish-box. It is a large cylindrical basket about 15 feet long and at least four in diameter. Its bottom end is made of sticks radiating from the centre, while its entrance is provided with the tapering conduit or "heart," as it is called by the natives, which we have already noticed in the *yutasKai*. Only in this case it is much longer, since the apex or inside end of the truncated cone-like aperture reaches almost to the middle of the whole basket. To make the safe keeping of the fish doubly sure, the converging sticks of this inner conduit are made to project inside beyond the small hoop to which they are fastened. These pin-like stick-ends easily dissuade the fish from trying to escape.

The 'kûntzai was formerly used in connection with beaver trapping, and to-day it does duty in several localities against the musk-rat. In such a case the lattice work is made of sticks so broad as to resemble laths more than rods, while the interstices between its component parts are so small that they leave no room for the rodent's snout should it attempt to gnaw off pieces of it. As an additional measure of safety for the trap, stones are also scattered on its bottom, upon which the game is said to direct its attention in the hope of effecting its escape. When used as a trapping implement these baskets are laid in the bed of sluggish rivers or creeks previously jammed with branches and boughs of coniferous trees.

But what we are presently concerned with is fish trapping. The 'kûntzai are used here (Stuart's Lake) in conjunction with the nazrwət. They are likewise deposited in the bed of the stream, but with their mouth or entrance end in inverse positions relatively to the direction of the current. I think that no words of mine can better explain their use and respective positions than the accompanying diagram showing both nazrwət and 'kûntzai weirs with their hurdle corrals and baskets. *A* is the 'kûntzai weir which is semicircular and extends to the middle of the stream only. For this reason, though it is built on the same principle of piles and braces as that of the nazrwət, the necessary strength is more easily obtained. Its shape precludes the possibility of being latticed as the former, yet every issue is carefully stuffed with spruce boughs. *B* and *C* alone are regular hurdles similar to those forming the corrals of the main or up stream barrier. *D* represents a partial trellis left open at the proper intervals to receive the mouth of the 'kûntzai *e*, which are laid

* Apparently a contraction of *ə'kûn-əstzai*, "fish-ova are lying down," which etymology is hard to explain, since those fishing implements have (*now* at least) no relation to fish ova.

down in parallel order to the number sometimes of ten or twelve. Immediately facing the row of basket entrances a large beam *F*, hewn on the upper side only, partly floats on the water and is partly supported on the forks of piles driven in the bed of the river.

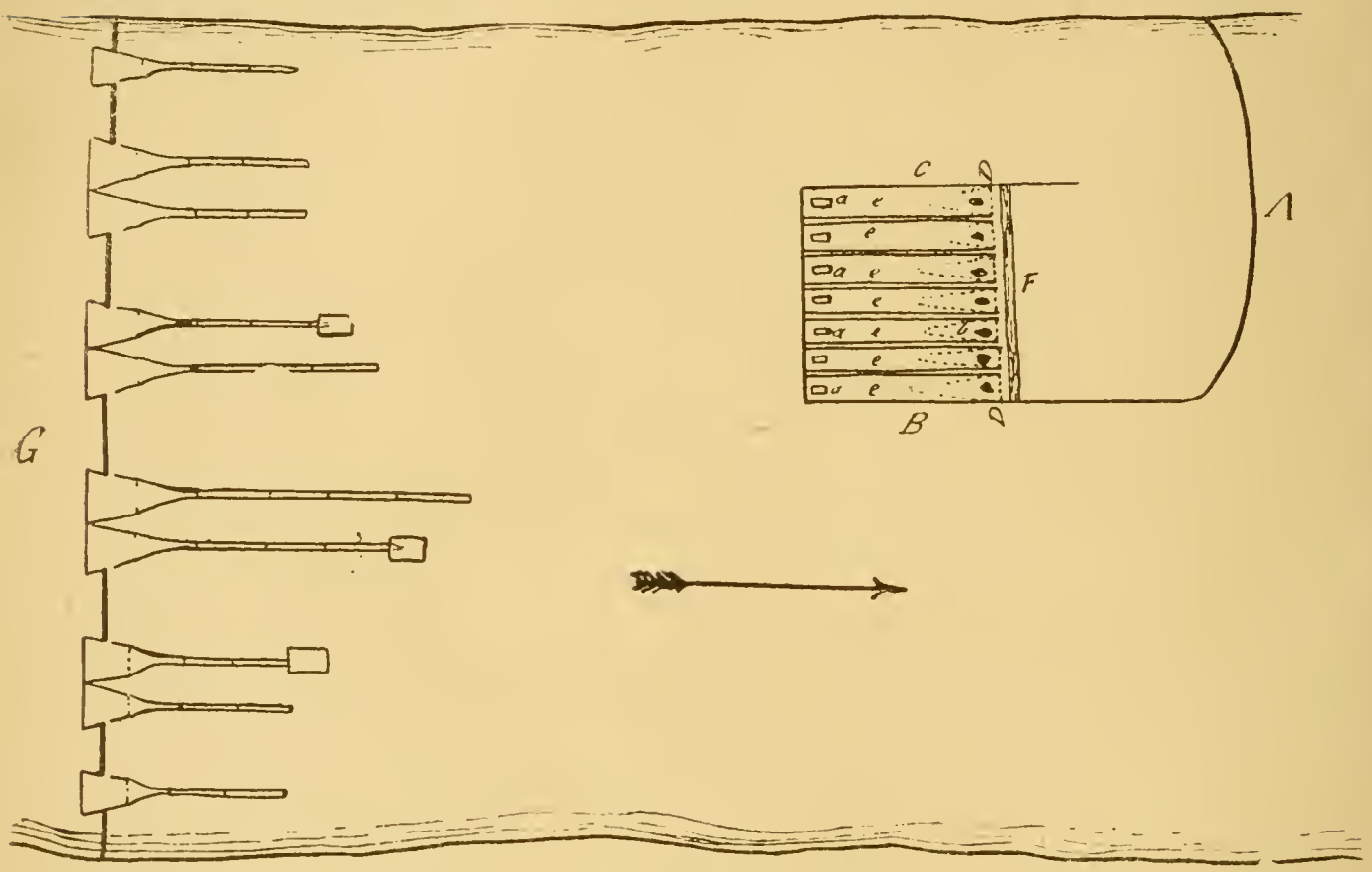

Fig. 76.

So much for the apparatus. Now as to its working. The fish, which is constantly following its way up stream finding any further progress impeded by the staking across the river *G*, remains there almost stationary during the day feeling shy of the nazrwət traps prepared for its capture at night. So it frequently happens that within the space intervening between the complete and the partial weirs large numbers of the fish have congregated ere the sun sets. Therefore natives, manning as many canoes as are available, drive it by dint of noise and by well directed strokes in the water, first into the corral *A*, *D*, *F*, and then to the cylindrical baskets wherewith it is secured. Then, at a given signal, one man from each canoe jumps on the beam *F*, and lifts up the entrance end of the baskets as a precaution against the possible egress of a few fish, while his partner returns by canoe to the opposite end of the trap to empty it of its contents. A lid or door *a* there prepared on the top side of the trap facilitates that operation. The lifting up of the 'kûntzai at the entrance extremity is the work of but a moment, inasmuch as it

chiefly results from the dropping in the water of the large stone *b*, which keeps it sunk to the proper depth.

Both the nazrwət and the 'kûntzai are serviceable in such places only as the outlet of lakes or shallow streams where the current is slow enough to permit of the erection of the necessary weir. Where this is impossible, a third and even more ingenious device—since once it is placed in position, it does all the work of itself—is resorted to. Lattice work projecting a few feet only from the shore is erected in the water, connected wherewith is laid on the bottom a tobogan-like basket with an opening near its curved end. The fish passes through this into an uncovered canal-like conduit leading into a large latticed reservoir where it is caught. The apparatus becomes more intelligible by a glance at fig. 76 wherein we have a sectional view of the whole. The lines marked

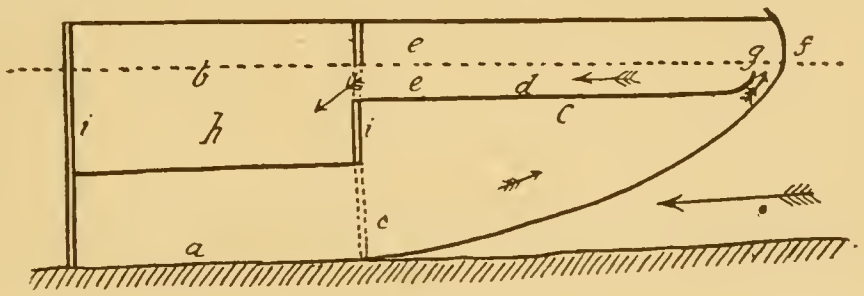

Fig. 76.

a, and *b* show respectively the bottom and the surface of the water. The upper part of the entrance basket *c* is flat and serves at the same time as a bed for the canal *d* which is formed by the addition of two long hurdles *e* on either side of the main or lower basket top. The salmon having entered at *c* soon finds its way upstream blocked at *f*, where the basket is rather narrow. But, as its instinct is decidedly against the wisdom of a backward course, as soon as it becomes aware of the free passage prepared at *g*, therein it runs and thence to the trap *h* laid out for its capture. *i* stands for one of the stakes which hold up the trap or reservoir while they secure the whole structure against the action of the current.

This fish-trap is called *əs*, and it does also good service against the land-locked salmon and other minor fish, such as trout, ling, etc., in such streams as are favored with a strong current.

Where the river is of a more sluggish character, a fourth device, called *we*, is resorted to. Though differently constructed, it works on the same principle as the preceding. Its use requires the building of a regular weir or staking across the entire width of the stream, and several such traps are laid out, side by side, pretty much as is done with the nazrwət.

The diagram fig. 77 gives a longitudinal section of this fishing contrivance, which, after the details furnished above, hardly needs a word of explanation. It suffices to follow the smaller arrows of the figure to understand the movements and account for the capture of the fish. Let me simply add that all the component parts of this trap are originally distinct and separate. They are merely kept in their proper place by means of willow bark wattlings.*

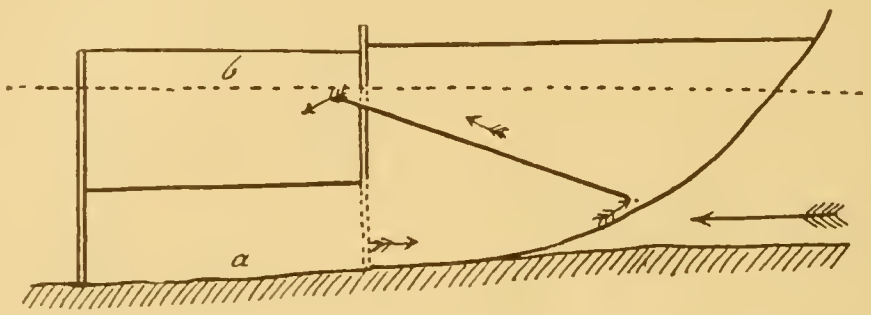

Fig. 77.

Less complicated than any of the preceding fish-traps is the *thé-sKai* (laid down on the bottom), which is also of latticed work and whose general appearance cannot be better described than by comparing it to a coffin (fig. 78). Its catching device consists of a sort of trap-door attached on the inside to the top of one end and slanting down until it almost touches the bottom of the box-like apparatus. This door is so arranged that it slightly yields up to pressure from the fish and shuts down on it once it has entered. The thés-Kai is used in shallow streams only.

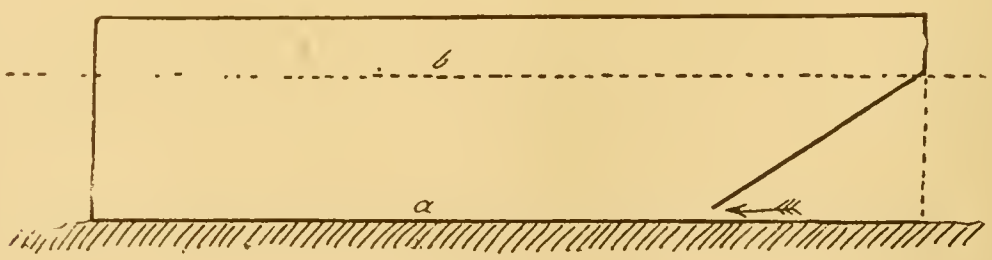

Fig. 78.

A sixth method of salmon fishing which is likewise practicable in a few localities only is that wherewith a *tə-sKai*,† or pot hanger basket has to be employed. "In some places where the stream contracts to an insignificant width and, in escaping from its rocky embankment, produces a fall deep enough to temporarily impede the salmon's course upwards,

* In the accompanying diagrams, the smaller or inner arrows show the course of the fish, while the larger ones point to the direction of the current.

† A contraction for *tə-əsKai*, "it (a recipient) stands up."

the Carriers simply bridge the fall over and with bark ropes suspend therefrom a sort of lattice, seven or eight feet wide, the lower extremity of which is curved up like a pot hanger (fig. 79). When the fish attempts to jump over the fall, he strikes the latticed barrier and drops back into the basket-like bottom."*

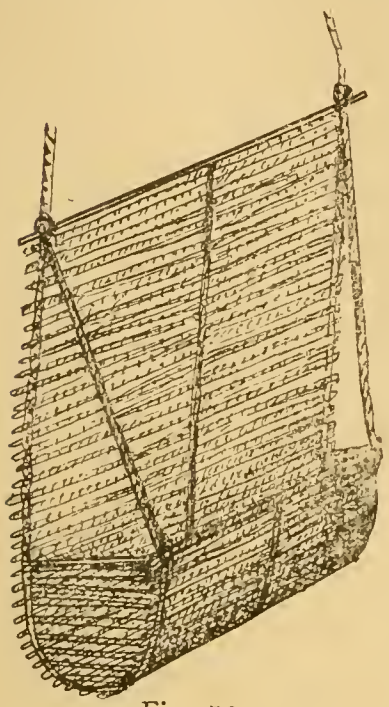

Fig. 79.

Lastly, where none of the above described modes of capturing the salmon are available, the Carrier or TsiɪKoh'tin has still a seventh expedient, more inconvenient and less profitable it is true, left at his disposal. This is fishing with the bag-net (fig. 152). Unless the run of salmon be exceptionally large, this method is rather tedious, and either dire necessity or the passion of a sportsman only can be adduced as an excuse for this kind of fishing, inasmuch as it is impracticable except at night. I still remember coming up some ten years ago, the mighty Fraser then swollen up to the brim by the July freshets. As we were making very poor time painfully poling up stream, I had resolved to profit by a beautiful moonlight to compensate by night boating what we necessarily lost on account of the slowness of our progress during the day. As we neared the Indian village we were making for, we frequently sighted from a distance human forms standing motionless on every available rocky promontory projecting into the river. Upon approaching them, we would perceive that they were intently gazing on one spot in the water, and when questioned as to their success, their almost invariable answer would be: *Sukrak! thallo hulɔʀ!* "Not a bit; there is no salmon.!" They were bag-net fishing.

Where the natural rocky projections are not pronounced enough wharf-like scaffoldings are erected for the convenience of the fishermen. Some such are to be seen on the HwotsotsɔnKwah which evidence no mean engineering capabilities.

In describing the Déné fishing contrivances, I have occasionally used the foot measure as the best, because the most common, means of determining their dimensions. Useless to say that this is not the recognized standard of length measure among the natives. Before proceeding further, it may not be irrelevant to enumerate their various measures.

* The Western Dénés, p. 129.

They are :—

1. *Horwə-thisni*,* the fathom, measured from end to end of the arms extended.

2. *Ne-tayo*,† the half-fathom ; from the middle of the chest to the tip of the fingers.

3. *Ne-t'sû-'kət*,‡ the smaller half-fathom ; from the breast to the extremity of the hand.

4. *Ne-kran-'kəz*,‖ the yard ; from the shoulder to the end of the fingers.

5. *Ne-t'silla*,§ the cubit ; extremity of the hand to the elbow.

6. *Ne-lla-tcəu-'kəʀ*,** the hand-length ; the hand up to the wrist.

7. *Tîltzəʀ*,†† is the width of the fourfing ers slightly stretched out. It is a net-mesh measure.

8. *U-'kwə-sthau*,‡‡ the finger-width. It is obtained by laying on the object measured as many fingers pressed together as may be necessary. It is the smallest Déné measure, and is resorted to in connection with pieces of tobacco, of bread, of costly cloth, etc.

The largest and most commonly employed is the first named, *horwə-thisni*, which serves to measure houses, fish-traps, nets, logs, etc.

Another measure of length of a more complex nature is obtained by pressing one hand over the breast and reckoning from the tip of the other hand to the elbow of the folded arm. It is therefore equivalent to three-quarters of a fathom.

To preserve their salmon the Carriers and Tsiɢoh'tin have recourse to the well known method of drying. After the head has been cut off, they open and clean the fish, after which they expose it for one day or two to the rays of the sun. The spine and vertebrae are then extracted, together with the flesh adhering thereto, which is destined for the dogs' larder or used as bait when trapping. The fish is next furrowed inside with a sharp knife as a precaution against putrefaction, and, two wooden splinters having been driven through the flesh so as to keep its inside constantly opened, it is dried beneath rough sheds by the action of the sun and air aided by the fire and smoke underneath.

As for the heads, which are considered by many as the *morceau délicat* of the salmon, they are cut open and smoked or their oil is extracted in this wise : After long willow twigs have been spitted through them, they

* Lit. "along it it is embraced ;" verb. noun.
† "Man-chest."
‡ "Man-breast-on."
‖ "Man-arms-half."
§ "Man-elbow end."
** "Man-hands-stick (wrist)-after."
†† "It straddles," fourth category of nouns.
‡‡ "It-over-it (long obj.) lies," a verbal noun.

are deposited in the water on the sandy shore of the lake or stream till they reach an advanced stage of decay. The stench they then exhale is simply asphyxiating. But not so with the natives, it would seem, since they do not recoil from collecting them and, after having slightly exposed them to the action of the sun as a means of evaporating the water they have absorbed, they submit them to a thorough boiling in large bark vessels and gather their oil in bags made of salmon skin. This they greatly relish, and have recourse to whenever they wish to enhance the natural succulency of their service berries and other fruit. To a civilized palate it is simply an abomination.

LAND ANIMAL TRAPS.

While the fauna of Northern British Columbia could be more varied, it is nevertheless abundant enough to relieve the more pressing needs of the Indian tribes stationed within its borders. With one single exception all the larger mammals on whose meat the prehistoric Dénés subsisted are still to be found there. By this exception I refer to the elk (*Cervus canadensis*, Erxl.) which the Carriers assert to have been indigenous to their present territory, but which has long disappeared from among them. Philologically speaking its successor is the horse, which both Carriers and Tsiꞁkoh'tin call a domestic elk (*yézih*, elk, *ji* dog or domestic animal), while the Tsé'kéhne see in the noble animal nothing but a "big dog" *ji-tco*. From an economic standpoint however, it is now replaced by the moose (*Alce americanus*, Jardine) and the cariboo (*Rangifer caribou*, Linn.)* The deer (*Cariacus virginianus leucurus*) which is unknown to the Tsé'kéhne and rare among the Carriers is exceedingly plentiful among the Tsiꞁkoh'tin. But Providence has given the former two valuable mammals which are practically wanting among the latter, I mean the mountain sheep (*Ovis montana*, Cuv.) and the mountain goat (*Capra americana*, Rich.) whose native names are *təpe* and *əspai* respectively. Other animals which are sought more for their meat than their fur are the hoary marmot (*Arctomys caligatus*), the ground-hog (*A. monax*, Linn.) and last but not least the hare (*Lepus americanus*). The porcupine (*Erethizon dorsatus epixanthus*) was formerly hunted for the sake of its quills which were greatly prized as án article of ornamentation.†

Most of the other mammals hunted by our Dénés are valued chiefly for their fur, though the meat of almost all is appreciated as an addition

* The moose is called *təni*, and the caribou, *hwotzih*, by the Carriers.

† The marmot is called *tətin*; the grounp hog, *'kani*; the hare, *kɔR* and the porcupine, *tət'quk*.

to their provision store. Prominent among them is of course the beaver (*Castor fiber*, Linn.), which is called *tsa* by all the Western Déné tribes. Its small congener, the muskrat (*Fiber zibethicus*, Linn.), is the beaver of the children and the poor, to whom it is known as the *tsé'két*. However a much more precious game even than the beaver is the black bear (*Ursus americanus*, Pallas), called *s̄as* by both the Tsé'kéhne and the Tsi¦Koh'tin and *s̄os* by the Carriers. Our Western Dénés, who usually prove so cowardly against a human enemy, are so courageous when matched with almost any wild beast, that among them he would not be considered a man who would be afraid of a bear. Personal encounters wherein bruin comes out second best are by no means a rare occurrence here, and not a few Carriers still bear the marks of the bear's teeth and claws. Even the grizzly (*U. horribilis*) is no terror to them. I have here at my side an Indian who has killed one with a revolver, while I am well acquainted with another, a most reliable man, who by his fearlessness and *sangfroid* put to flight a bear of that species with which he had been sitting face to face for perhaps a quarter of an hour without receiving as much as a scratch from the monster, and without having used the shotgun which he had not had time to load. The main point in such awkward circumstances is not to betray the least fear and to look one's adversary right in the eyes. Show any degree of hesitation and you are lost. Although no two species of the grizzly bear are known to science, it might be, however, that the *shyas*, the bear of which I am speaking, is but a variety of *Ursus horribilis*, inasmuch as the Indians pretend to know another and much more formidable one which they call *tsa-rana* or "he busies himself with the beaver," by allusion to its favorite occupation, beaver hunting. This animal they fear, and so far they profess never to have killed any adult of the species, but to have occasionally seen a few. It is, they say, much larger than the *shyas* or common grizzly; its heel is proportionately narrower and the fore end of its paw much broader. It is worthless as an economic item, as it emits a most offensive smell.

The other fur bearing animals sought after by the Western Dénés are the marten (*Mustela martes*, Rich.), the fisher (*Mustela canadensis*, Linn.), which the Carriers call a "big marten," *tcannih-tco*, the otter (*Lutra canadensis*, Turton), the wolverine (*Gulo luscus*, Linn.), the lynx (*Felis canadensis*, Rich.), the fox (*Vulpes vulgaris*), the wolf (*Canis lupus occidentalis*), the coyote (*Canis latrans*), and the two small carnivores, the ermine (*Putorius vulgaris*, Linn.), and the mink (*P. vison*, Brisson). In addition to *washi*, its regular name, the lynx, whose ancestors are believed to have had intercourse with women, is often half jocosely called *sûnté*, "my first cousin" by the Carriers. As to the different

varieties of foxes and wolves, they are recognized and differentiated by adjectives, not distinct names, in the native tongues, as they are founded merely on colour, not, as with the dog, on anatomical peculiarities. It is a well known fact among our aborigines that, for instance, red, cross and black foxes are found in one and the same litter, so that it seems naturalists should not see more difference between a red and a black fox than they do between a gray and a white bull-dog.*

When not chased or killed by chance as happens in the course of one's travellings, the above named fur bearing animals are procured either with

Fig. 80.

traps or snares. At least three varieties of the former contrivances, all of genuine Déné origin, are still in general use, and a fourth, the bear

* It should be mentioned here that aboriginal usage prevents the hunter from killing for himself any of the largest animals, especially such as are chased for their meat. After his game has been brought down, he will invariably give it to one of his companions, or if he happens to have none, he will cache it up against wolverines or any carnivorous animals and return to the village. Then he will say to any one whom he chooses to favour with his spoils: "In such and such a spot in the forest I have shot a cariboo for you. Go and fetch it." To act otherwise would be equivalent to courting the scorn of every hunter of any standing in one's place.

trap, though now a thing of the past, is still remembered by old men. Its main or fall part consisted of trunks of small trees united into a sort of lattice work by means of muskeg pine saplings interlaced through them. To ensure additional efficiency for the structure, large stones were laid over it, heaps of which are still to be seen in several places, generally close by the banks of salmon streams. I can find no native in a position to satisfactorily explain the mechanism of this trap. All I can gather is that it was very effective, not only against black bears, but even against grizzlies.

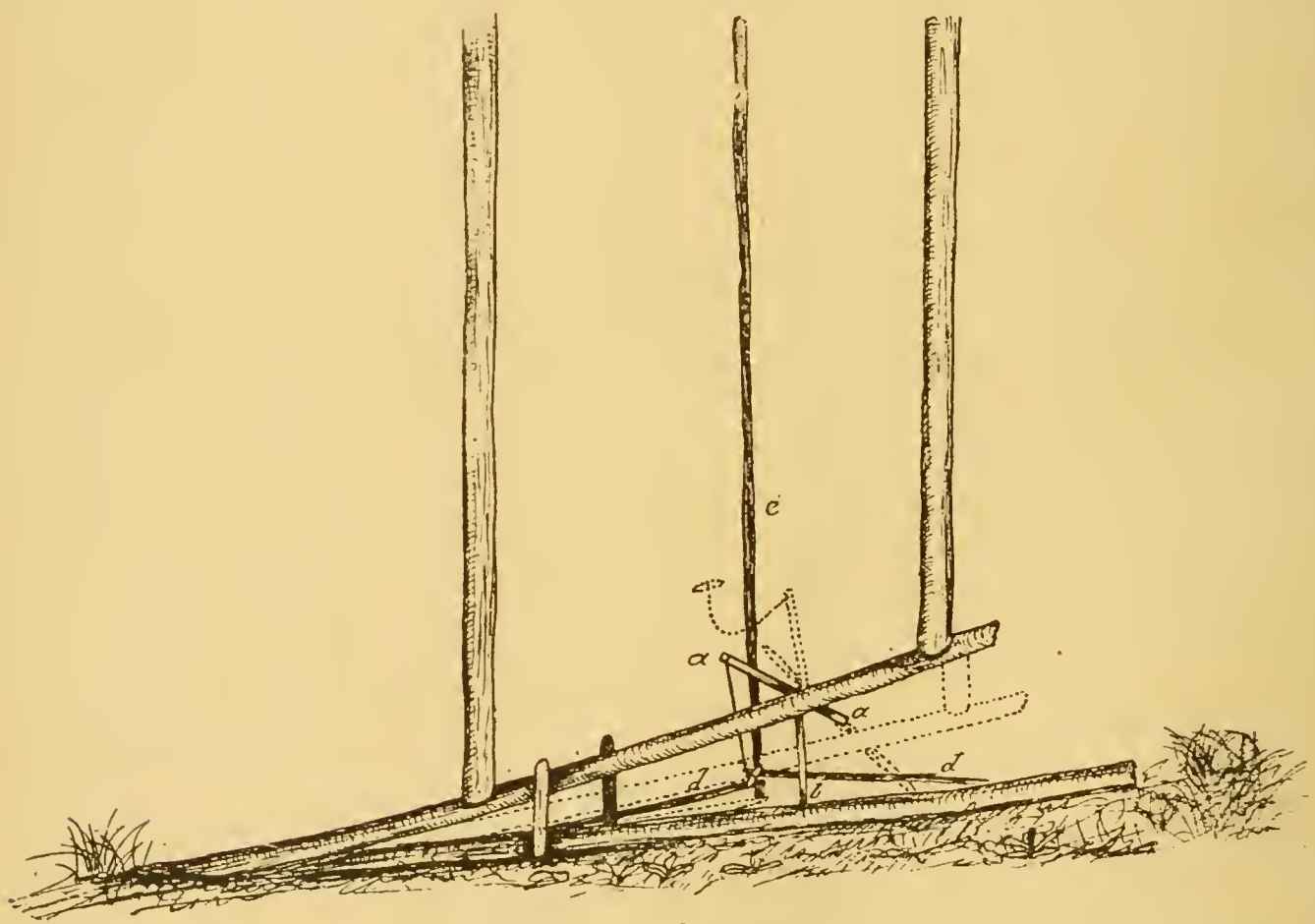

Fig. 81.

To secure martens and other small land game, the Carriers never use but the trap shown in fig. 80, which is very simple in construction. It is merely composed of a fall stick *a*, one end of which is thrust in the ground in an oblique direction, and which springs down on the transversal or ground stick *b*, through the falling off of the pole *c*, resting upright on the bait stick *d*. To prevent the game from getting at the bait otherwise than through the trap, a rectangular enclosure is erected with small pickets generally against, or close to, the bole of a spruce or pine tree. Should the fall stick not exactly correspond in position with that lying on the ground, the marten might survive the springing of the trap and

eventually effect its escape. To guard against such an accident, two stakes *e* are driven in the ground on each side of the falling apparatus. The use and working of the weight pole *f* need no explanation.

Much more complicated, as may be seen from fig. 81, is the action of the lynx trap. The device causing the capture, if not the death, of the game, is identical with that of the preceding, save that two weight poles instead of one are used. But the principle of the apparatus itself is altogether different, and might be pointed out as an evidence of no mean ingenuity. Although I have faithfully outlined in dots the working of the trap while in the act of springing, some further explanation of it may be necessary.

The general principle governing its action is the balance principle. The fall stick being pressed down by the weight sticks, thereby forces up the furthest end of the lever *a*, which is balanced on the post *b*, acting as fulcrum. As an immediate consequence, the string button *c* (fig 82) is started up and at once arrested in its flight by the horizontal sticks *d* engaged between the button and the perpendicular pole *e*. The reason of the springing of the trap is now easy to understand. The lynx, or fox, upon trying to get at the bait laid on the ground a little distance off within a picket enclosure, is bound to tread on the trip stick *e* which is thereby disengaged from the pressure of the button, which immediatcly whirls up yielding to the action of the weight poles on the lever, as shown in the dotted outlines. Both the post and the perpendicular pole *e* are stuck in the ground, and the latter, as well as the weight sticks, are set up through the branches of the tree under which the trap is prepared.

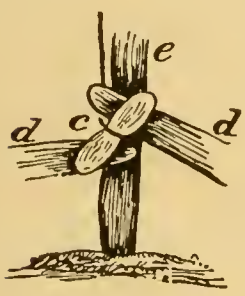

Fig. 82.

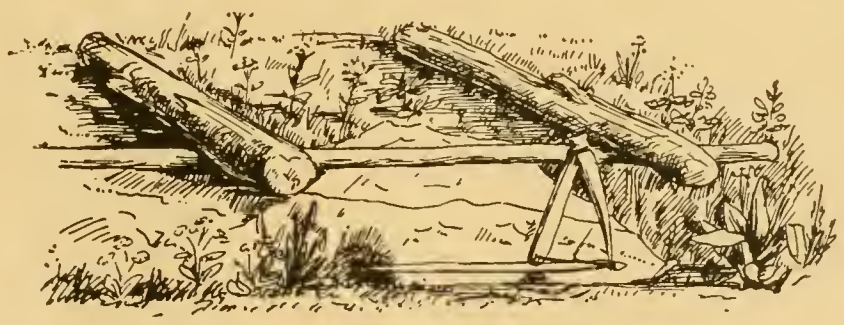

Fig. 83.

A somewhat different setting of the same trap is obtained by engaging the trip stick *above*, instead of *below*, the middle of the button piece. In this case no bait is provided for the game, but the trip stick is thoroughly rubbed over with castoreum, by licking which the animal springs off the lever, whereby the fall stick slips down on the base.

A modification of this trap is occasionally used by a few to capture the beaver. But as the Crees are credited with its invention, no further mention of it is necessary.

Fig. 83 represents a kind of trap differing in every particular from the three already described. It is proper to the Tsé'kéhne and does service against marmots. As shown in the cut, it is usually set in front of the animal's den, and its action or working apparatus has some resemblance to the common figure four trap. Its trip stick *a* is laid across the entrance of the marmot's den and is disposed so as to form a right angle with the left side of the spring stick *b*. Of course this is concealed from view with dry grass, leaves, moss or any other available vegetable material. In order to give even a clearer idea of the mechanism of the trap, its com-

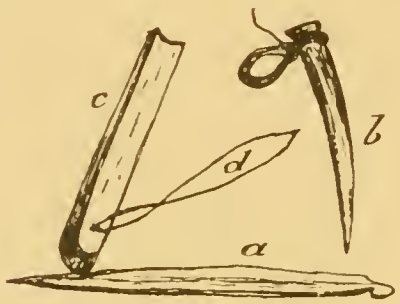

Fig. 84.

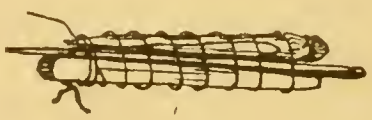

Fig. 85.

ponent parts will be found separately drawn in fig. 84. Let it suffice ot add that, while the fall stick is looped to the springing piece *b*, the small end of the latter is at the same time notched in the trip stick *a* and connected with the post *c* through the double string *d*, which presses in the extremity of both trip and spring pieces.

These traps are not hastily constructed on the spur of the moment with any chance material taken at random from the immediate vicinity of the spot where they are set. They require some little care in their preparation, and they are therefore made at home, and carried about with their different parts tied together as shown in fig. 85.

SNARES.

Whilst we are occupied with the divers contrivances invented by native ingenuity to capture land animals, it may be well to give some idea of the Western Dénés' methods of snaring the same. To such as may be tempted to call in question the appositeness of such minute details, I would beg to point out that the aborigines, whose technology we are studying, are pre-eminently huntsmen no less than fishermen; and to call complete a review of their industrial implements, which does not

embrace their various fishing and hunting contrivances, would be equivatent to supposing well constituted a body lacking nerve or bone. Besides giving us some idea of their proficiency as craftsmen, they enable us to witness, as it were, the workings of their mind as applied to their means of providing for the necessaries of life. So that those very details which may appear unimportant to the superficial reader, add in the estimation of the scientist, a psychological interest to a study which is primarily technological. What has already been said of the Western Dénés' fish or animal traps has led us to the conclusion that, if those aborigines are wanting in the appreciation of the beautiful, they are by no means devoid of the faculty of judging and selecting that which is best suited to the attainment of their ends. A review of their snaring devices cannot fail to confirm this impression.

At least eight different methods of snare setting, generally varying according to the nature of the game, obtain among the single Carrier tribe. I leave it to the following figures to explain the details, and shall content myself with noting *en passant* that which they cannot tell.

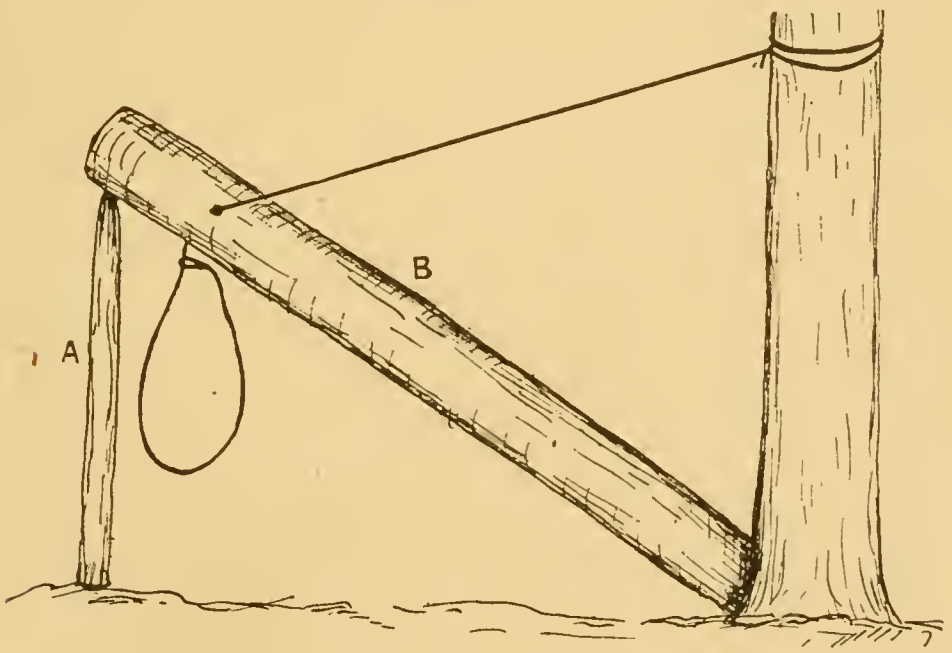

Fig. 86.

Figs. 86 and 87 represent bear-snares * whereby the game is either choked down on the ground (fig. 86) or flung up in the air (fig. 87). The action of the former is exceedingly simple, though it cannot fail to prove very effective. Of course it is clear that the bear upon getting engaged in the noose, which is in all cases held in the proper position through

* The root for snare in general is *pį*, and this word is suffixed to the name of the game for which each snare is intended. Euphony demands that it be preceded by an *m* ; therefore bear-snare is *ɔ̄əs-mpį* ; lynx-snare, *washi-mpį*, etc., in Carrier.

small strings lashed to the bushes near by, will, to free himself therefrom, pull forward or backward. Either movement must result in the fall of the post *a* and thereby of the beam *b*.

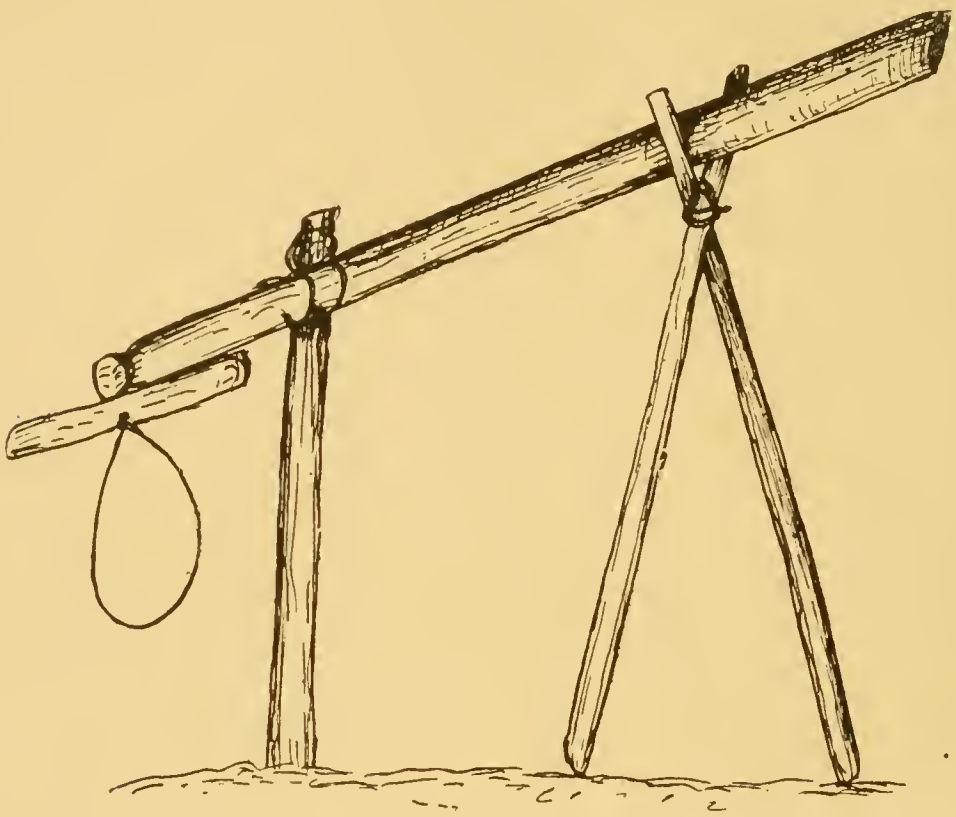

Fig. 87.

As to the second mode of setting the bear-snare, it may be necessary to explain that as soon as the game is noosed up by the falling of the crossed poles, he will naturally, in his efforts to disentangle himself, struggle for a support for his paws so as to annul the action of the noose. This is provided for him in the shape of the wooden piece noticeable under the small end of the lever. But as the role of the hunter is not one of mercy, he has taken care, prior to setting his snare, to bore through that piece of wood a hole large enough to ensure its slipping down with the contraction of the noose. So that by pressing down on it, the animal only hastens its own death. The manner of lashing the lever or balancing pole to the post is shown in Fig. 88. It is reputed the safest and is adopted with regard to all other snares requiring a similar appliance.

The setting of the cariboo snare cannot be simpler. As shown herewith, it merely consists in a noose attached to a stout stake (fig. 89) with which the game scampers away, and becoming engaged among fallen or standing trees chokes himself to death.

Until a few years ago, the Tsé'kéhne were wont to use these snares extensively and with no mean results. As many as forty or fifty were

set in a line through such defiles or passes of their mountains as were the most frequented by the roaming bands of cariboo. After two of their most active hunters had been deputed to watch at either end of the line, the others, numbering fifteen or more, would, by loud shouting and firing of guns, drive the reluctant game to the snares where it was captured.

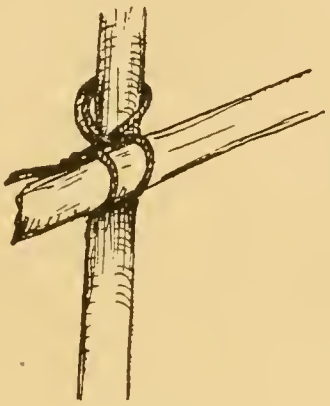

Fig. 88

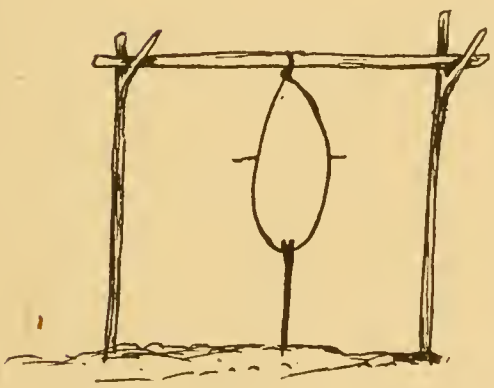

Fig. 90.

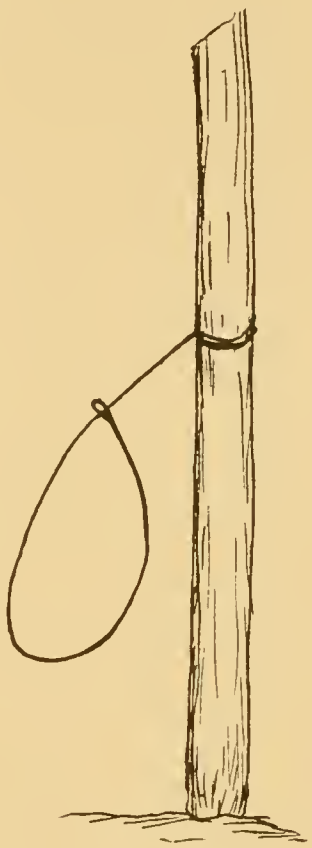

Fig. 89.

In figs. 90 and 91 we have snares very differently set, though they are intended for the same kind of game, viz.: the lynx. The working of the apparatus is in the first model identical with that of the cariboo snare. The little stick planted in the ground is destined to no other purpose than that of holding the noose in position with the help of the two side strings.

Fig. 91 though more complicated in appearance is no less easy of understanding. It is composed of two levers balanced on their posts, the end of the main or snare pole being engaged under that of the other, which is prevented from yielding to the weight of its larger end by the temporary stick *a* set thereunder. The struggling of the lynx when caught in the noose will cause this to drop off on the ground,

whereby the small end of both levers will spring up, leaving no possible chance of escape to the game.

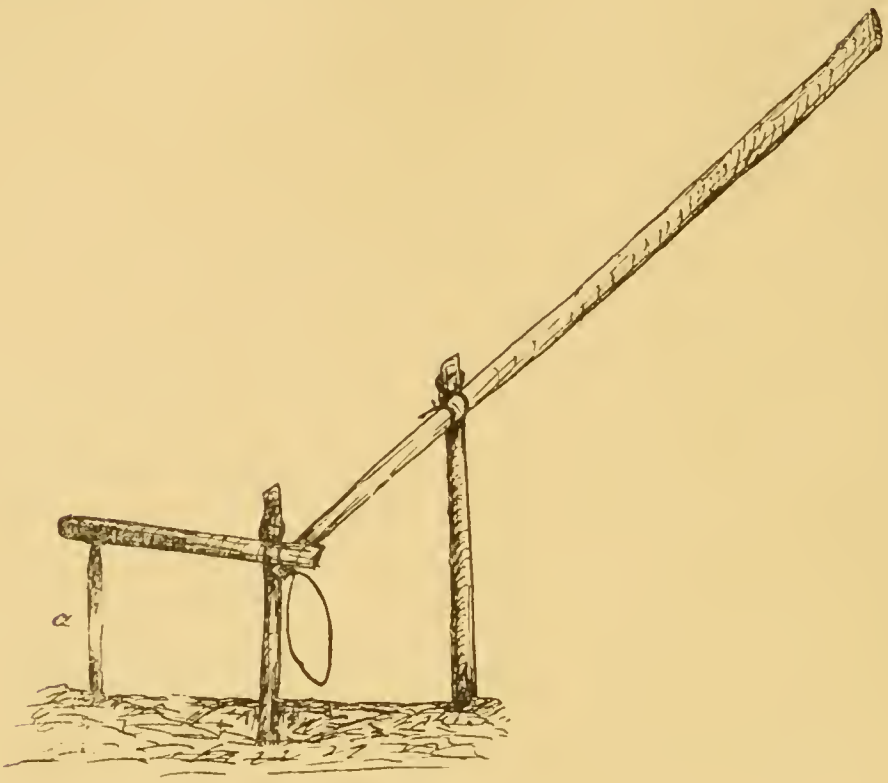

Fig. 91.

The fox snare (fig. 92) is likewise based on the balance principle, and needs no further explanation than this: The snare string above the noose

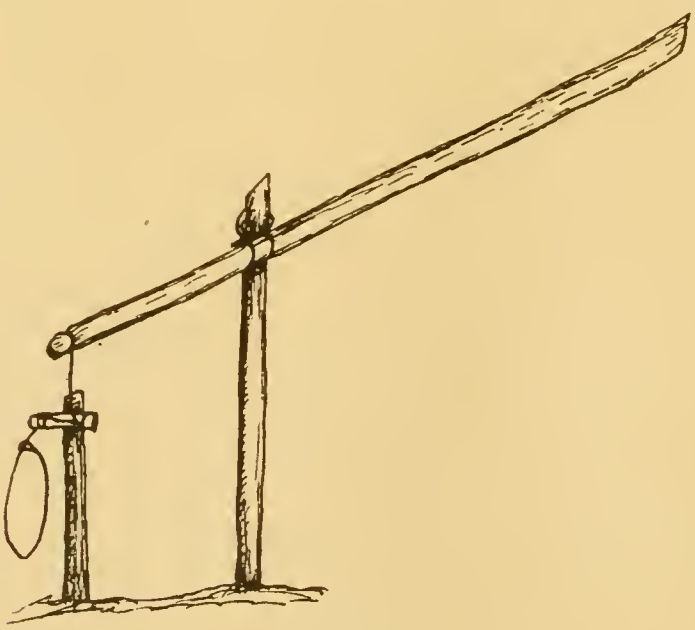

Fig. 92.

is wound round a stake solidly driven in the ground and a detachable transversal piece of wood in such a way that it unrols itself by the

slightest movement on the part of the noosed animal. This connection between the transversal and the horizontal sticks I have tried to illustrate

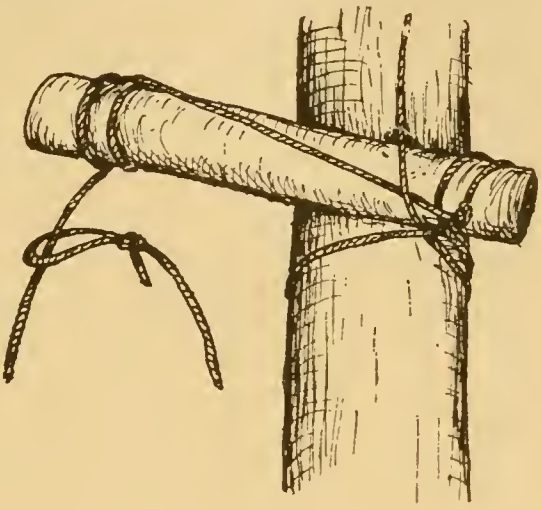

Fig. 93.

by fig. 93 ; but I think that its working requires to be seen to be fully understood. This snare does also good service against marmots.

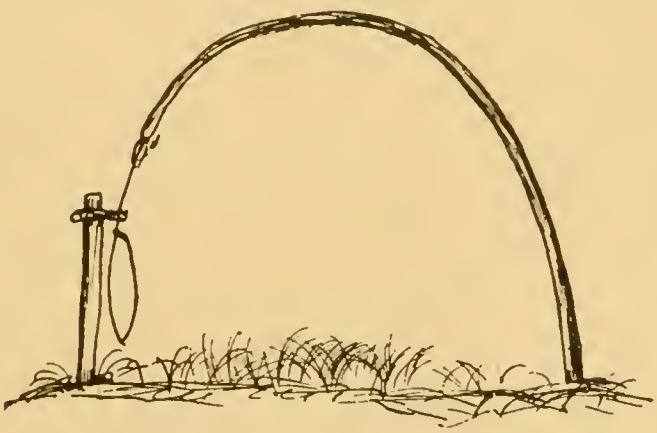

Fig. 94.

Fig. 94 represents a mode of snare setting usual in connection with the latter game only. It needs no explanation, since the lever of fig. 92 is simply replaced here by a bent down switch.

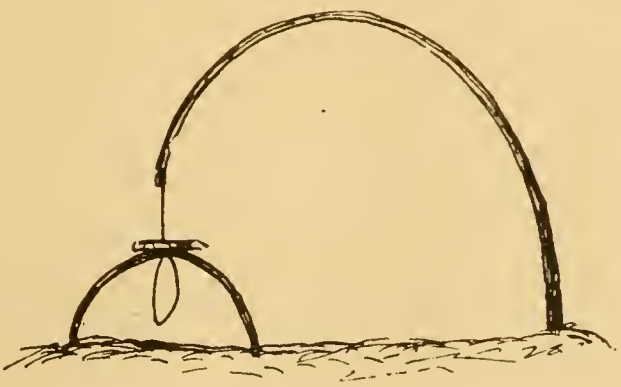

Fig. 95.

Lastly fig. 95 gives us an idea of the rabbit snare as it is commonly

set by our Carriers. The method is identical with the preceding, save that a switch forming a semi-circle is substituted for the stake to which the movable cross-piece is temporarily fastened. Of course this necessitates a change in the position of the latter which in this case is laid horizontally over the apex of the hoop.

The strings of the cariboo and bear snares are made of moose or cariboo skin strands, generally four in number. As a protection against moisture or any other deteriorating agent, they are in most cases wrapped with thin strips of willow bark. Hempen twine such as is for sale at any H. B. Co. fort nowadays serves against any species of minor game.

Before leaving this subject, it may not be amiss to mention that even waterfowl were formerly sought after by means of snaring devices. Ducks and grebes were then the coveted game. The snares consisted in a noose cord of vegetable fibre attached to a stick firmly driven in the bottom of the piece of water, more generally in such shallow places as the fowl ordinarily frequent when feeding.

Waterfowl of any larger species such as geese and swans, especially the latter, are said to have been secured in olden times, by an ingenious stratagem which cannot be better described than by relating the following fragment of the Carriers' national legend wherein the famous hero ʒstas plays such a wonderful role.

"In the course of his travellings, ʒstas came upon a family consisting of the father, two sons and a daughter. One day, the old man sent his sons to try their chances at catching swans in his hereditary fishing-place. The young men, who had already heard of ʒstas' wonderful deeds, said to him: 'Cousin, we always lose our time in our attempts at catching swans. Our father wants some to make for himself a head-dress and a breast blanket* for the winter. People say that you generally succeed in any enterprise you undertake. Come then, and help us.' ʒstas readily consented, and went out with them.

"When they had reached the family fishing grounds, they perceived eight swans lazily gliding on the water. 'Have not you taken a rope along with you?' asked ʒstas. Upon which they pointed to a long rope which had been left there for future use in a similar emergency.

"Presently ʒstas donned a head-dress made of the head and neck of a swan, and, taking the rope with him, swam slowly towards the swans imitating in every point their movements. Then he deftly tied the feet

* See the chapter on Dress and Personal adornment.

of five of them to his long rope without as much as awakening their suspicions, and swam back to the stake driven in the bed of the river to which he secured the end of his rope. Being now sure of his game, he took off his head-dress when the swans perceiving their mistake took to their wings, but were soon arrested in their flight by the retaining rope and stake. They were then taken by the wily stranger.

"The young men who had on previous occasions tried the same trick without avail, were delighted at the success of their guest, so much the more that nobody before him had been able to get by this method more than four swans at one time. They therefore invited him on another day to give them a further proof of his ability, and even to outdo himself if that was possible. Much flattered at their encomiums, ʒstas this time tied the legs of no less than eight swans. But as he was swimming back to attach the rope to the stake, he unwittingly lifted off his head-dress, upon which all the fowl flew off taking up with them ʒstas who was thus carried very far away into the countries beyond the horizon."

The story then proceeds to relate how, new Vulcan, having let go the rope, he fell down upon a rock wherein he sank and was buried alive.

Whether this or any analogous mode of securing waterfowl was really practised by the prehistoric Carriers cannot, of course, be now positively stated. Strange as it appears, some such stratagem may have been resorted to, since we read that in China waterfowl are caught by wading in the water up to the neck with one's head hidden in a gourd and then seizing the bird's legs to finally draw it down in the water without ever revealing one's personality.* Be that as it may, the modern Carriers know it only by tradition. They now prefer to build small circular huts of coniferous boughs or even walls or cairns of stone in the favorite haunts of the fowl behind which they hide and by imitating their call, prevail upon them to approach within shooting range when they are easily dispatched.

I have enumerated the fishes and land animals trapped or otherwise hunted by our Western Dénés, and described the various devices made use of to secure them. I leave it to the following list of the names of the lunar months in two dialects to furnish the reader with some hints as to the time when they are generally sought after.

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* See *Six Legendes Américaines identifiées à l'histoire de Moise, etc., par le R. P. Petitot, Missions de la Congrégation O.M.I.*, Paris, 1877, p. 741.

NAMES OF THE TWELVE LUNAR MONTHS.

IN CARRIER.

Sa-tco, the big moon.
*Tcəz-səl.**
*Tcəz-tco.**
Cin-uza, moon of the spring.
Təkus-uza, moon of the carp.
Tañr-uza, moon of the summer.
Késəl-uza, moon of the land-locked salmon.
Thallo-za, moon of the red salmon.
Pît-uza, moon of the bull-trout.
Ɉoh-uza, moon of the white-fish.
Panrən nət'səKeı, "during its half one navigates."†
Sa-tco-dîn'ai, "next to the big moon."

IN TSÉ'KÉHNE.

Int'sih-sa, moon of the wind.
Yastəse-sa, moon of the snow-storms.
Ahta-înza, moon of the golden eagle.
Ratqé-înza, moon of the wild goose.
S̄as-inza, moon of the black bear
Mənəh-tcé-thə'oɟe, moon when they‡ take to the water.
Hə'ke-ta, "the buffalo ruts."
Ɉtsiz-înza, moulting moon.
Sa-tsətle, little moon.
Sa-tcî, great moon.
Ɉ'ka'î, "the fat (of the animals) disappears."
Mə-thən-thən-tsətle, "what freezes is covered with bare ice."

The first of these months corresponds nearly to January.

The size of the page prevents me from giving side by side with the above the names of the TsiɁKoh'tin months. Their main peculiarities may be thus resumed: March is the "moon when one comes out of the subterranean huts"; April is the moon of the sucker; July, that of the *Kes*, or white-fleshed salmon; August, that of the red-fleshed salmon; November is called "this month we all enter the subterranean huts," and December is the moon of the ice. It will thus be seen that different social habits and occupations have left their impress even on the names of the months such as recognized by the three Déné tribes under study.

OBSERVANCES OF THE HUNTER AND THE TRAPPER.

Prior to their embracing Christianity, the Western Dénés had recourse to various other means of ensuring success while engaged in hunting. Several superstitious practices were observed, the neglect of which was

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* The root *Tcəz* is now meaningless. The finals *səl* and *tco* mean "small" and "big" respectively.

† I. e. Lake Stuart is opened to navigation during the half of this month.

‡ I. e. The goslings.

regarded as entailing unavoidable failure. Most of these were based on their regard for continence and their excessive repugnance for, and dread of, menstruating women.

As soon as a Carrier had made up his mind to try his chances at bear-snaring, he separated *a thoro* for a full month previous to the setting of his snares. During all that time, he could not drink from the same vessel as his wife, but had to use a special birch bark drinking cup. The second half of the penitential month was employed in preparing his snares. The omission of these observances was believed to cause the escape of the game after it had been snared. To further allure it into the snares he was making, the hunter used to eat the root of a species of heracleum (*tsél'ép* in Carrier) of which the black bear is said to be especially fond. Sometimes he would chew and squirt it up with water exclaiming at the same time : *Nyûstluh !* may I snare you !

Once a bear, or indeed any animal, had been secured, it was never allowed to pass a night in its entirety, but must have some limb, hind or fore paws, cut off, as a means of pacifying its fellows irritated by its killing.

Speaking of the meat of snared animals, I cannot help remarking that young women having their menses could not eat of their head, heart or hind part without exposing themselves to a premature death through a kind of rabies which was sure to attack them in after years. This infirmity led them to keep tearing off the flesh of their arms with their teeth. If perchance they were favored with a lucid moment, they improved it by making their confession to the shaman. "When young, I ate of the head, etc., of an animal" they would say. Thereupon the medicine man would suck from the body of the patient what was represented as the tabooed morsel unlawfully swallowed, and forsooth the woman was cured !

The heart even of water-fowls was forbidden to similarly circumstanced young women, who had also to abstain from cutting up the grebes which, among the Carriers, are caught each spring in such large numbers. These fowl are full of blood, and their being manipulated by such persons would communicate to the latter either hæmorrhage or unnaturally prolonged menses.

If in the woods with his wife, the hunter would also prefer to see her tear herself up in the bush and thorns, to let her pass in the narrow trail wherein he may have deposited his snares preparatory to setting them. Should she as much as step over without touching them, her mate would certainly consider any further attempt at capturing game as futile and useless.

The skulls of the bears whose flesh has been eaten up are even to-day invariably stuck up a stick or the broken branch of a tree. But the aborigines fail to give any reason for this practice.

If the Carrier was to use traps instead of snares, the observances preparatory to setting them varied somewhat. When martens were the intended game, the period of abstinence from sexual intercourse was shortened to ten days or thereabouts, during which the trapper slept by the fireside pressing down a little stick over his neck. This, of course, could not fail to cause the fall-stick of his traps to drop on the neck of the coveted game! The chewing and squirting up of the heracleum root were observed in this as in the former case. The deprecatory formula was merely changed into *Nyûskuh!* may I entrap you!

When successful, the trapper had to be very careful that no dog touches his prey, which, to avert such a misfortune, he had to hang up a peg in the lodge as soon as this was practicable. Contact with a dog would certainly indispose the game's fellow martens against the traps of the hunter responsible for such a slight.

No superstitious practice appears to have been followed as a preparation to beaver hunting, save that to ensure a larger catch, one-half of each trap was daubed with red ochre. But nobody who does not care to condemn himself to useless efforts at securing any further supply of the game must be unguarded enough to swallow the little patella bone of the beaver. In like manner, if after having captured a beaver, a Carrier has the carelessness to let one of his dogs get at that bone, he may as well resign himself to return home empty handed. During the whole beaver-trapping season, his first capture will infallibly be his last.

Lynx not only was not eaten by the women, but even when once snared, it could not be brought in the lodge through the doorway. Women as well as men daily enter through that passage, and the former must have no intercourse, however indirect, with the feline. So it was introduced by men into the lodge through the smoke hole in the roof. It was touched by men only, its flesh boiled by men and eaten by men. The reason of the aversion of the women for the lynx will appear from the following legend:—

"A young couple of Indians was living in the woods. One morning, as the husband was absent chasing large animals, a stranger of surprising beauty and apparently endowed with superhuman powers came upon the young woman. "Follow me: you shall be my wife," he said to her. But as she was very much attached to her husband, she strove hard not to hearken to him. Yet such were the stranger's charms and hidden powers

that her mind was as if paralyzed in his presence. As she pretended that she had no provisions for the journey, he told her that the distance was short, and that he had plenty in his own place. Whereupon he seized her and she had to follow him. Now the stranger was no other than the lynx. She managed however to snatch from her lodge in leaving a grouse (*Dendragapus franklinii*, Dougl.) which her husband had shot a while before. As she walked behind her seducer, she would pluck a few of the grouse's feathers and down and drop them along thereby marking her trail on the ground. By the time that she reached her new home, the bird was entirely stripped of its feathers and down.

"The lynx's lodge was full of pieces of the fat of cariboo and moose hanging up to dry. Before dark, he went out to do a little hunting a short distance off.

"Meanwhile the young woman's lawful husband who had experienced no difficulty in tracking her, thanks to the fallen feathers and the trampled herbage—for it was summer time—came upon her as she was sitting lonely in the lynx's lodge. She at once told him the story of her abduction by the stranger. At the same time she insisted that the latter was uncommonly powerful, and cautioned her husband against using violence in this case. "We had better try and take him by stratagem, for both of us together are nothing to him," she said.

"She had barely uttered these words, when the lynx came home after a successful hunt. The woman went out to him and said presenting the new comer: "Husband, here is your brother-in-law, for he is indeed my own younger brother." Upon which the lynx asked: "Have I then a brother-in-law?"—"Yes indeed, and a very good one," answered the woman. Then her own lawful husband told the lynx how very pleased he was to see his sister married to so good a hunter and thereby delivered from her first husband who had been living with her against the wishes of all her relations. To confirm the sincerity of his declarations, he presented the lynx with his own quiver full of arrows, keeping only his bow for himself. "I will hereafter see you more than once," he added "and each time I shall make you similar presents."

"The lynx was so pleased that he insisted upon preparing himself his guest's supper.

"Now prior to his return home, the young woman had related to her real husband how the lynx had asked her whether she was having her menses. Lest she may have been tempted to prove unfaithful, she had answered affirmatively, though that was not the case. Hearing this, the lynx had manifested a great dread of her and left her untouched. They

had then, her husband and herself, agreed as to the plan to follow to effect her deliverance.

"Therefore, after they had eaten to their content, she purposely attempted to play with the lynx, while her husband, who was lying on the opposite side of the fireplace, feigned sleep. But each time that she tried to touch the lynx she was sharply rebuked: '*Skranthahoñkrés*,* you will throw a spell over my arms,' he would say. Yet she would not desist in her endeavors to keep him awake so as to render his sleep more profound once he would fall asleep.

"At length after he had been a while soundly sleeping, she motioned her husband with a stick that now was the time to act. Therefore he cautiously seized his bow which was double pointed, as one end of it was provided with a long horn dart while the other had a stone spear head. With all his might, he sank the horn dart into the lynx's breast, while his wife chopped off his head with a stone adze she had kept concealed in her bosom.

"After he had transpierced him with the horn dart, he and his wife turned him over and he repeated the same operation on his back with the stone spear head of his bow. They did not leave him till he had been reduced to a shapeless mass of bone and flesh.

"Ever since, our women have been afraid of the lynx, for he is indeed a ravisher."

In the estimation of the Carriers of the generations gone by, fishing was not fraught with the same perils as hunting, and therefore few, if any, superstitious precautions accompanied it. Indeed the only vain observance which can be mentioned in this connection was that which forbade women having their monthly flow to cut or carve salmon, inasmuch as this was reputed to seriously endanger the health and especially enfeeble for life the arms of the transgressor.

When no shaman was at hand to consult about the quantity of the salmon coming up, either the elements or some peculiarities in the vegetable kingdom afforded them a means of prognosticating the nature of the forthcoming run of fish. Thus a continually rumbling thunder or the early fall of the service-berries portended to them an abundant harvest. I would not affirm that these ideas have no longer any hold on the mind of a few modern Carriers. Those persons who are *au fait* with the popular notions current among the lower classes of the Old World will, I think, hesitate before tasking my Indians with uncommon credulity.

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* *Thahoñkrés* is hard to translate in English. The lynx means that her touch while in her unclean state will incapacitate him for the chase.

CHAPTER VI.

Wooden Implements.

I may mention as having some relation to one of the objects of the preceding Chapter, namely fishing, the *hwot'səz** and the *talləj*.† The former

Fig. 96.

is the wooden maul which serves to drive home the piles of the salmon weirs used by the Carriers. It is bottle-shaped, and of the hardest wood obtainable, generally birch (*Bitula papyracea*).

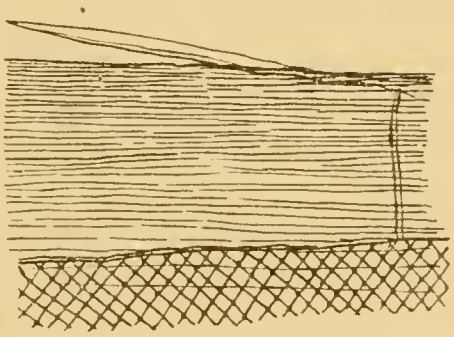

Fig. 97.

The latter is the wooden float attached to their nets. Here we cannot fail to remark that the Western Dénés had in this connection an opportunity of exhibiting at least a minimum of artistic taste, and, as in most cases, did not improve it. The cut (fig. 97) shows the working of the float when in actual use.

Such entirely wooden implements as are unconnected with either fishing or hunting are relatively few and unimportant. Therefore we need not tarry long in their description. Commencing with those which serve recreative purposes, we may refer in the first place to the *tətquh* (fig. 98) of which mention has already been made in the course of a

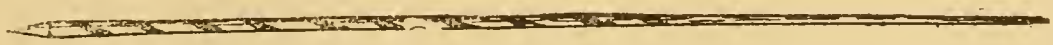

Fig. 98.

* Second category of nouns.

† A verbal noun almost equivalent to "it floats up."

native legend. It is a rod five or six feet long which is thrown through the air so as to fall as far as possible from the initial point of launching, the distance reached determining the measure of success attained. This game was formerly much in vogue among the Carriers. It is now obsolescent.

Fig. 99.

A great rival is *nəzəz*, which is played with sticks of almost the same shape, (fig. 99) though much stouter near their fore-end. As they do duty on the frozen surface of the snow, the finest polish possible is aimed at in their preparation. These sticks vary in length from three to six or seven feet, according to the strength, possessed or assumed, of the player. The Carriers are to-day passionately fond of this game, which is played, as a rule, by adverse bands, the stake going over to the party which first attains the fixed number of points.

Fig. 100.

Tə'ko· is another pastime which is somewhat childish in character. In most cases it is played by the fireside in the camp lodge during the long winter evenings. Its necessary accompaniments are a blunt-headed stick (fig. 100) and two small, thin and springy boards firmly driven in the ground, one close by each player. The two opposite parties sit facing each other and throw the tə'ko· against the little board on the other side, upon hitting which it rebounds to the knees of the successful player, who is then entitled to recommence and continue as long as luck favors him. Failing to get at the mark, the tə'ko· is handed to the other partner. The number of points obtained indicates the winner. The old men profess to be ignorant of that game, which is probably adventitious among our Indians.

While we are treating of the games in connection wherewith success depends on the skill of the performer, not on mere hazard as with nət'sə·a, atlih and atiyéh, we may mention *'kei-la-pəs* ("encircling willow") or arrow target shooting, though the implement required for its performance

and from which the name of the game is derived would, considered in itself, be classed among the objects which shall form the subject matter of our next chapter.

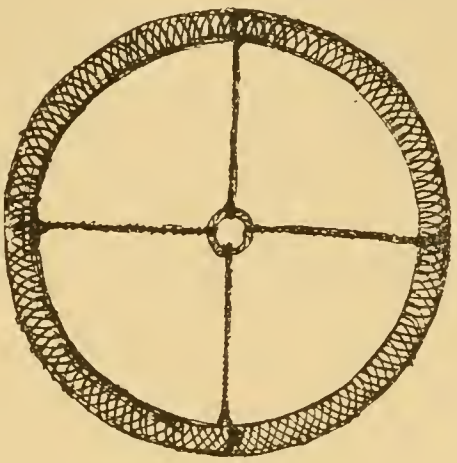

Fig. 101.

This is a sort of open work disk or wheel made principally of willow bark strings, though the frame of the hoop is composed of three or four switches very closely fitting each other and kept in position by a strong lacing of strips of bark. Radiating from the axis, or heart as it is called, are four cords of similar material stretched so as to form a cross (fig. 101).

As this was formerly the great national game of the Carriers, I may be pardoned for giving its rules somewhat in full.

A team of five or six men was matched against another of presumed equal force, and after each player had been provided with a given number of pointless arrows, the disk was set wheeling away by one team to the cry of *tlép ! tlép !* This was the signal for the other to shoot at it while it was in motion. Should they fail to hit it, it was returned rolling to the first team so as to give them an equal chance of making at it with their arrows. As soon as the disk had been shot, the real competitive game commenced. The arrows which had hit it, two, three or more, became the stake for the rival team to win over. For this purpose the disk was hung up a short stick planted in the ground near the team who had succeeded in sending home the arrows, and it was aimed at successively by each member of the opposite party. Should any one be lucky enough to shoot it with his first arrow, the stake played for became his irrevocable property. When the target was hit, but on a subsequent attempt of the marksman, the stake was thereby won over, subject to its being redeemed by any member of the opposing team performing the same feat. In this case the game became a draw ; the wheel was set rolling anew, and the nature of the stake was determined as in the first instance.

I have never seen 'keilapəs played by others than children and young men. But in times past it had a sort of national importance, inasmuch as teams from distant villages were wont to assemble in certain localities more favorable to its performance in good style. Indeed, until a few years ago the sporting field of some was literally dotted with small cavities resulting from the fall of the arrows.

Fig. 102 represents the device doing duty among the TsiɁKoh'tin as a spindle. Prior to the introduction of European textile fabrics, its uses were doubtless of a much wider description than to-day. As a matter of fact, I have never seen it in actual use except to spin or twist the rabbit skin lines entering into the manufacture of blankets. The discoidal attachment is wanting in the implement such as known among the Carriers.

Fig. 102.

There can be imagined no simpler or more primitive method of lighting fire than that originally obtaining among the Western Dénés. Instead of the somewhat elaborate fire-drill in use amongst the northernmost congenerous tribes, such as the Loucheux and the Hares, our aborigines' apparatus was reduced to a short stick, generally of resinous scrub pine *(P. contorta)* set revolving on touchwood by immediate contact with the hands as is practised by the Wataweita of eastern equatorial Africa.*

Shall I speak of the Western Dénés' canoes? They certainly possess no peculiarity to render them worthy of any mention, unless it be their very rudeness of form and finish. Of course I do not here refer to the birch bark canoes, which among the Carriers and the TsiɁKoh'tin, have gone out of use since the last fifty years or so. Of these I have seen but very few examples, and they were not representatives of their class.

Fig. 103.

West of the Rocky Mountains, the present Déné canoe is dug out of balsam poplar trees (*Populus balsamifera*), and either because the material will not admit of a similar treatment, or because our Indians have not yet learned the method of expanding the sides by the action of fire underneath, as is done by the Coast Tribes with regard to their cedar canoes, they are left almost as narrow at the centre as the tree was while in its

* See "Fire making apparatus in the U.S. Museum," by Walter Hough, p. 553.

original state. A few cross sticks only prevent the sides from shrinking in too much. This want of width, added to the fact that the prow is always made of the broader end of the tree, renders these canoes very awkward in stormy weather on our lakes, inasmuch as they generally compensate in length what they lack in breadth.

Another fact worthy of remark is that the Carriers, who owe to their frequent intercourse with the Coast Indians, much of their technology and all such of their customs as are unknown to the rest of the Déné nation,* should have failed to take the hint from their maritime commercial visitors and build wooden canoes, until they appropriated, some seventy years ago, two rough "dug-outs" manned by a party of Iroquois hailing from the East.

Their paddles offer hardly any noticeable peculiarities, save perhaps the absence of the cross-like appendage at the end of the handle which is common among maritime tribes. This is explained by the different manner of handling the implement. While the Coast Indian when paddling seems to divide his strength between propelling forward with the left hand and pulling backward with the right, the edge of the wooden canoe being made to serve as a partial fulcrum for the lever in his hands, the Carrier, who unconsciously labours under the illusion that he is still manning a frail birch bark canoe, does all his paddling away from his dug-out without ever touching its sides. This exercise necessitates the peculiarly long shaft of his paddle and renders useless the cross-end of the maritime implement. The aforesaid illusion is so patent that even while at the helm, he scarcely ever uses his paddle as a rudder to steer his craft. He prefers to paddle out alternately to the right and to the left, thereby communicating to the canoe a kind of zig-zag course.

Fig. 104.

To return to the description of technological items. In fig. 104 we have an industrial implement whose destination cannot be guessed, inasmuch as its form is rather misleading. It is *not* an oar, but a *'ah-tcɔ̄s*. This compound word, when understood, prevents the possibility of any misconception as to the use of the object thereby determined. *'Ah* is the Carrier word for a species of fern whose bulbous root our aborigines greatly relish, and *tcɔ̄s* means "paddle," and by extension any paddle-shaped object. Hence this implement is designed to dig out the esculent root of the fern *'ah*. Yet, in spite of its name, it

* See my paper in the Transactions of the Royal Society of Canada, Sect. II. 1892, p. 109–126.

does frequent service as a mere *pe-yəs̄-hahwozo* * or snow shovel, as it is also used to clear of snow the doorway of habitations and space adjacent thereto. It should be remarked, however, that the prehistoric ·ahtcəs, was much ruder in form and finish than that herewith illustrated.

The bulb of this fern is eaten while fresh and baked *à l'etouffée* in this wise: "The natives dig out a hole about three feet in diameter in the ground, pave its bottom with heated stones over which they strew chips of alder (*Alnus rubra*) bark, and then fill it up with the roots. The whole is then covered with earth and the roots will be ready for the table ten or twelve hours later, that is when entirely cooled down."†

As far as I can ascertain, no such esculent root as ·ah grows in the Tsi|Koh'tin's country. But its absence is more than compensated by the presence there of two very useful tubers, *əsroñh* and *sûntî*, which resemble respectively diminutive oblong and spheroidal potatoes. When these

Fig. 105.

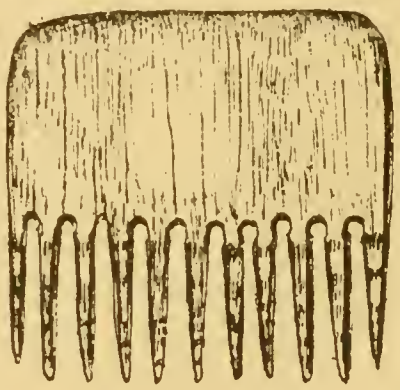

Fig. 106. ½ size.

have reached maturity, they are dug out with the T-shaped tool shown in fig. 105. As may be seen, there is nothing complicated in the nature of this implement, since it is nothing else than a birch branch cut off with its shoot. To ensure greater toughness to the material, its point is generally treated to a slight calcination. Immense numbers of the root are annually gathered. They are either boiled as potatoes or smoked in the house. For the latter purpose a sinew or buckskin line is passed through each of them, and while thus forming strings of vegetable beads, they are hung up near the chimney or the fire hole. The smoking process is rather long, and at its close, the tubers are eaten without any further preparation. I have also seen this method practised among the Tsi|Koh'tin with regard to the smallest of their potatoes.

From the culinary peculiarities of the Tsi|Koh'tin we may pass to their faculty of imitation and adaptiveness as evidenced by the herewith

* Lit. "wherewith-snow-is shaved off."

† The Western Dénés, p. 135.

figured toilet article which had been made and was used by one of them immediately before it was handed to me. If this comb stamps them as good imitators, it must be confessed that it entitles them to no particular claim to be ranked as artists. An examination of the cut will reveal the extreme simplicity of the process of fabrication of this article. A set of small holes have first been drilled with the hole-borer (fig. 130), after which the portions of the wood whose veins had thus been cut asunder have been extracted with the knife leaving out what becomes the tines or prongs of the comb.*

The original comb of the Western Dénés was remarkable for the length of its prongs rendered necessary by their peculiar way of wearing the hair prior to their first encounter with European civilization. In all probability, it was made in about the same style as the above Carrier comb (fig. 107) which is not a toilet article, but served the purpose of ritual observances. To secure success in his trapping or snaring operations, the Carrier had, besides lying down by the fireside, dreaming, etc., to make use of this three-pronged comb, which consists in the juxtaposition of as many wooden pins bound together with sinew lines.

Fig. 107. ½ size.

That our Western Dénés are indeed a self appropriating race is further evidenced by the *tcon'i* or wooden cuirass which the Carrier warriors used to don as a protection against the enemy's arrows. This was composed, as a rule, of dried rods of *Amelanchier alnifolia* (or *Canadensis*) disposed in parallel order and held together by means of cariboo skin lines interlaced through the middle and near both edges. It was identical with the wooden armour formerly in use among the coast tribes from which it was undoubtedly borrowed. I have never seen any; but fig. 53, plate xv. in Niblack's "The Coast Indians of Southern Alaska"† will give some idea of its general appearance.

Composed of the same material was the *'kei-tla-thən*‡ or shield, which was oval in form as the Roman *clypeus*. The mode of manufacture only differed somewhat, as the branches or twigs of amelanchier were very closely interwoven. No specimen is now available for illustration.

Another wooden implement which, though I have seen in actual use, I cannot figure herewith for the lack of a specimen to draw from, is

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* The Carrier name of the comb is *tsi-ltzu*, "the head is curried," a verbal noun.

† Ann. Rep. U. S. National Museum, 1888.

‡ Lit. "willow (or birch)-the hand-hold"; 3rd categ. of nouns.

the *tcən-əst'ɲu* (sticks-interwoven) of the Babines. Its name indicates its mode of fabrication, but leaves us in the dark as to its shape or destination. Imagine a rough arm chair without legs and made of stout, split sticks of willow *(Salix longifolia)* or other wood secured by skin strings, and you have a perfect idea of its form. As for its use, it may be properly pointed out by a simple reference to the plate xx illustrating Ancient Mexican Carriers, in Cyrus Thomas' paper on the Manuscrit Troano.* The packing devices seem to be identical in both cases, while the modes of handling the implement appear to have been different. Our Western Dené women—useless to remark that among primitive peoples heavy work always falls to the lot of the woman—pack from the forehead with a skin line broadening in the middle, and, if the load is unusually weighty, the ends of this line are made to pass around the chest so as to render the burden more manageable. Among the Hwotso'tin, a fraction of the Babine sub-tribe, I have seen a woman thus packing, apparently with the greatest ease, her invalid husband, a man of more than average size and weight.

I shall purposely avoid speaking of the board boxes likewise used as carrying mediums by some of our Carriers, because they are imported from the coast, not indigenous to the Western Dénés.

These other objects which, as sociological items, are also due to the influence of the maritime tribes, but had become naturalized among, and were made by, the Carriers, were the *nîɲrivəs*, the *hanə'taih*,† and the *t'sak*. The first two are respectively the ceremonial rattle and mask, none of which can now be illustrated from existing specimens. These were almost the only objects of art of genuine Dené manufacture to which I can point, and yet I do not think I unduly depreciate my Indians' artistic capabilities by adding that they were rather below than above the average of similar aboriginal carvings. The masks were used only by mimics accompanying by grotesque gestures and jerking of the head the dance of a privileged few. But the rattles served a double purpose: they did service in connection with a notable's dance, being then held in the hand by the dancing personage himself, and also as an accompaniment to the incantations of the *niɲqəu*,‡ or shaman. Both implements are, even at the present day, so common among North Pacific Coast tribes that no description of either is needed by readers ever so little *au fait* with American aboriginal paraphernalia It may

* Contributions to North American Ethnology, vol. v., p. 20.

†Lit. "that (round obj.) which is taken off;" the verb *ha-nes'aih* in the potential mood.

‡Lit. "he makes people sing." Not to forget that among most aboriginal races, song and magic are convertible terms.

suffice to refer less informed readers to the plates or figures illustrating Niblack's "The Coast Indians of Southern Alaska";* G. M. Dawson's "Notes on the Haida;†" W. H. Dall's "Masks and Labrets,‡" etc.

Fig. 108 illustrates an implement which, for the lack of another term we must call a rattle, though in shape, use and native name § it widely differs from the above mentioned ceremonial rattle. It is campanulate in form and is composed of a rounded piece of wood, hollowed out in its larger or bottom end and split asunder as far up as that part of it which serves as a handle. It was used by the participants in that aboriginal ceremony, the *thét'-səlrwəs*,‖ which I have described in a former paper.** By slapping against one another, its two halves produced a very sharp rattling sound which could be heard at a great distance.

Fig. 108. ⅙ size.

This is perhaps the proper place to mention another piece of Déné carving, the gentile totem, toad, grouse, beaver, etc., which on great festival occasions was exhibited as a means of attracting offerings, apparently to the said totem image, which were in reality presents, voluntary or due, to the givers of the feast. Of course no specimens of these carvings now exist among the natives.

The *t'sak*, the third borrowed sociological item mentioned above, was a canoe or trough-shaped vessel, sometimes elaborately carved to the arms of its possessor, I mean the totem animal of the notable to whom it belonged, and wherein food was served to the invited guests. This large vessel was brought into requisition on the occasion of extraordinary festivals only. Identical specimens are shown in plate xxxviii. of Niblack's book.

Another kind of wooden utensil called *t'sai* or dish, which was oftentimes inlaid with haliotis shells as an attempt at ornamentation, is also known to have been possessed by a few Carrier families. But I greatly suspect that the vessel, no less than its ornaments, had been bartered from among the coast Indians during the fairs which were periodically held on the borders of the Kitiksons' territory.

This brings us to the consideration of the Western Dénés' household utensils.

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* Rep. U.S. Museum, 1888.

† Report on the Queen Charlotte Islands. Ann. Rep. Geol. Surv. Canada, 1878-79.

‡ Third Ann. Rep. Bureau Ethnol; Washington, 1884.

§ *ɣadə'ta'*, "from which there comes a slapping sound."

‖ "One runs out."

** The Western Dénés, etc., Pro. Can. Inst. Vol. VII, 1888-89, p. 154.

CHAPTER VII.

BARK IMPLEMENTS.

In no branch of aboriginal industry is the Western Dénés' and especially the Carriers' inferiority as workmen more apparent than with regard to their household utensils. Most certainly no more primitive ware could be imagined, both as regards material and workmanship. It has already been pointed out that no pottery or clay objects of any description ever existed among them. With reference to the Carriers and the Tsé'kéhne, the list of unknown technological items must be extended so as to comprise even the twined basket-work vessels so common among the majority of American indigenous races. These are replaced among the aforesaid tribes by corresponding vessels made of either birch *(Bitula papyracea)* or spruce *(Abies nigra)* bark. Only the coarser variety of vessels, thoes the object of which is but temporary, are made of the latter material, the remainder, those which are properly household utensils, being invariably of birch-bark.

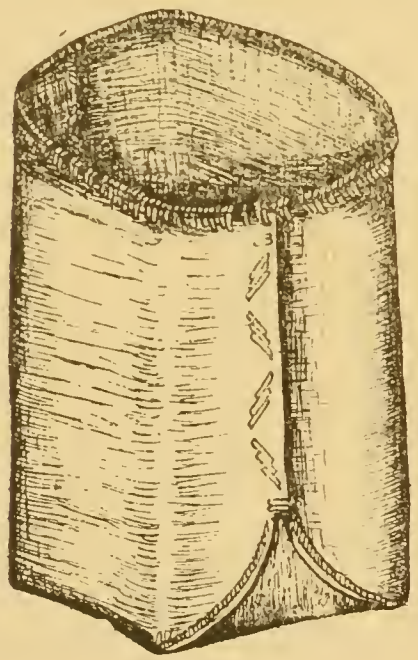

Fig. 109.

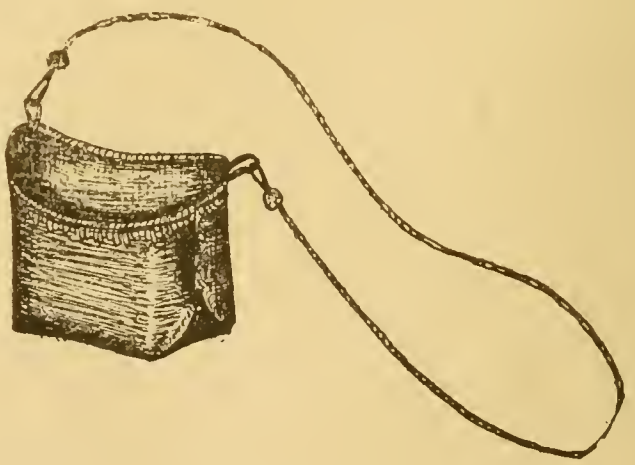

Fig. 110.

The most popular vessels among the Carriers are the two herewith illustrated. Both are of a single piece of birch bark, and this must indeed be understood of all birch or spruce bark utensils. The shape and cut of the material previous to sewing are represented in figs. 111 and 112. In the former figure, besides these, the seams and stitches will be

found faithfully delineated. The curved bold lines in the cut indicate the places of cutting preparatory to folding up the bark, and the dotted outlines stand for what becomes the outside edge corresponding to, and

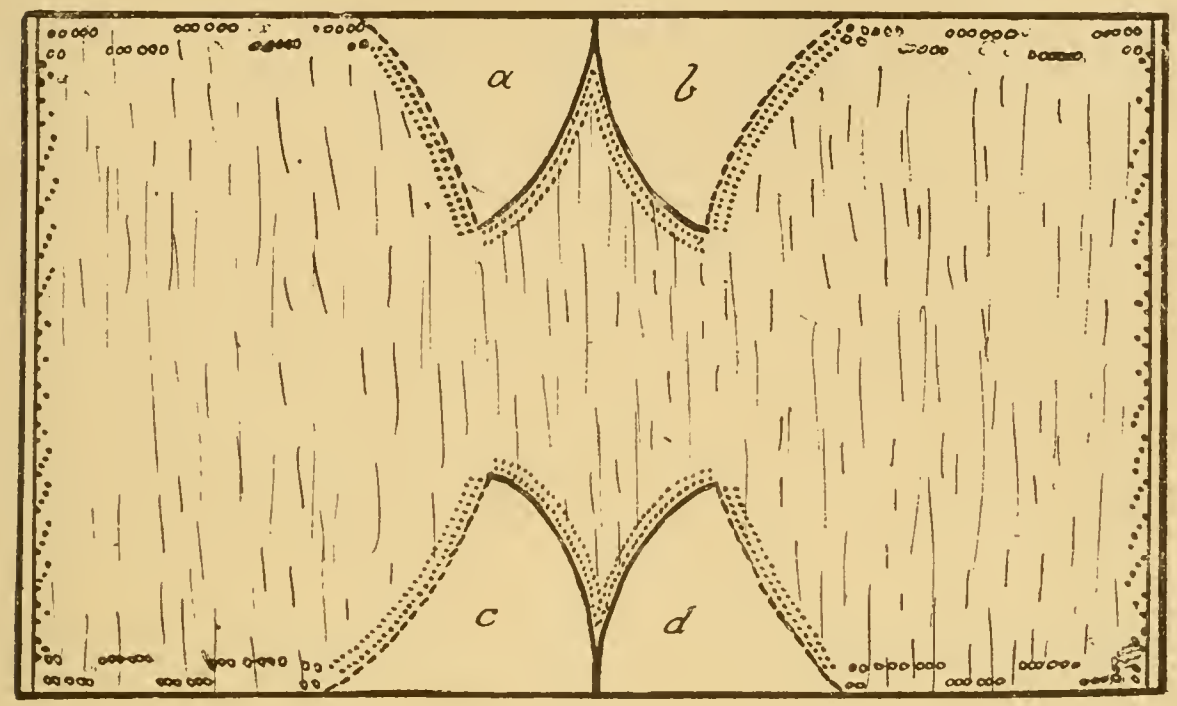

Fig. 111.

sewed with, the tapering piece of bark noticeable in the lower part of the finished vessel. Such portions of the material as are comprised between the bold and the dotted lines—*a*, *b*, *c*, *d*—are cut off once the adjacent

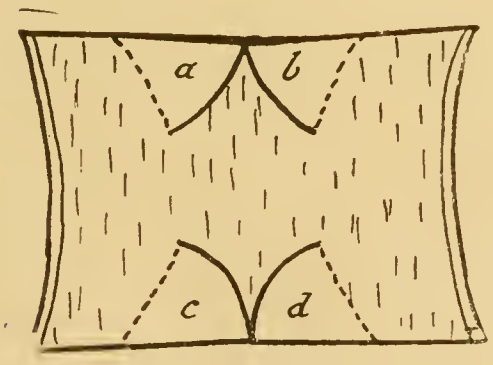

Fig. 112.

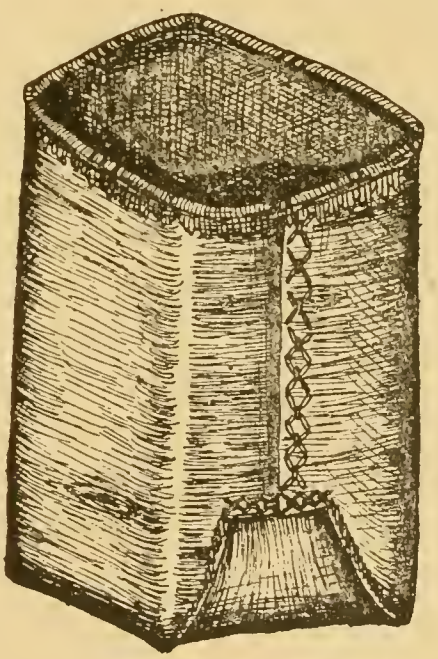

Fig. 113.

parts have been sewed. To give the necessary consistency to the rim, a rod is made to encircle it on the inside. Furthermore, to still add to the

solidity of the vessel and ensure greater neatness of appearance, wattup, or split spruce root, is made to pass through the bark and wrapped very tightly around the rod and rim. In order to avoid striking successively the same grain of the bark with the awl, the holes are pierced each receding backward till four or five have been stitched in, after which the first of a new series is made closer to the brim. To break the monotony of the wattup wrapping, small pieces of *tcən-na-t'qəɟ** or bird cherry (*Prunus pensylvanica*, Linn.) bark are inserted, generally in the middle of each of the four sides of the vessel, enough of their shining surface being left uncovered to be easily visible.

The largest of the bark vessels above illustrated is called a *tcaɟyaɟ*. It has, as a rule, a capacity of from three or four to ten gallons. As regards the uses to which it is put, they are manifold. While the women are gathering berries, it serves to bring home the fruit which has been immediately collected in the smaller or *theɟ* vessel (fig. 110). In the lodge the *tcaɟyaɟ* is also the recipient of clothes, the sewing implements of the women, the family heirlooms, the trinkets of the children, etc. Moreover, it serves frequently to cache up close by the houses any household chattels which it is thought expedient to protect against mice. When thus employed it is suspended, carefully covered with birch bark, from the lower limb of a branchy evergreen.

Some tcaɟyaɟ, while remaining identical in form, materially differ in their style of cutting and sewing. Of these fig. 113 affords a fair example.

None of the bark vessels of the Carriers is provided with a lid.

The second vessel, the *theɟ*, "receptacle," (figs. 110, 112) somewhat resembles the first in form and hardly differs in make, save of course, the altered cutting of the bark. But while all the tcaɟyaɟ are very deep and as nearly quadrilateral in shape as the material will allow, the orifice of the theɟ is oval and the vessel is proportionately more shallow. Moreover, all such specimens as exhibit a pretension to elegance have the middle of their length rims somewhat elliptical. Inserted between the bark and the encircling rod on both narrow sides are two buckskin thongs forming loops to which is attached the neat yarn string—generally adorned with multicoloured yarn tufts—which serves to suspend the vessel from the neck. The theɟ is carried on the breast, while the tcaɟyaɟ is packed, sometimes two at a time, on the back and the occiput. Sometimes, as is the case with the more stylish patterns, the cherry bark ornaments are replaced by dyed horse hair arranged so as to produce geometrical designs.

* "Stick which one tears around," by allusion to the mode of treating its bark.

The the[is above all a berry basket, but it does also frequent service as a drinking cup. Its size is subject to great variations, as it may contain from one pint to two gallons. Both tca[ya[and the[are to be seen in every Carrier household, and the latter especially is used so extensively that there is hardly any girl, however so poor, who does not possess her berry basket.

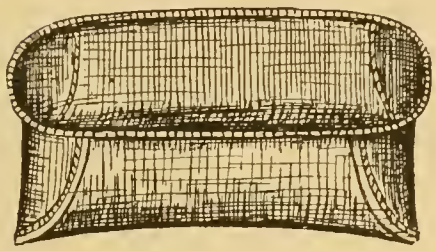

Fig. 114.

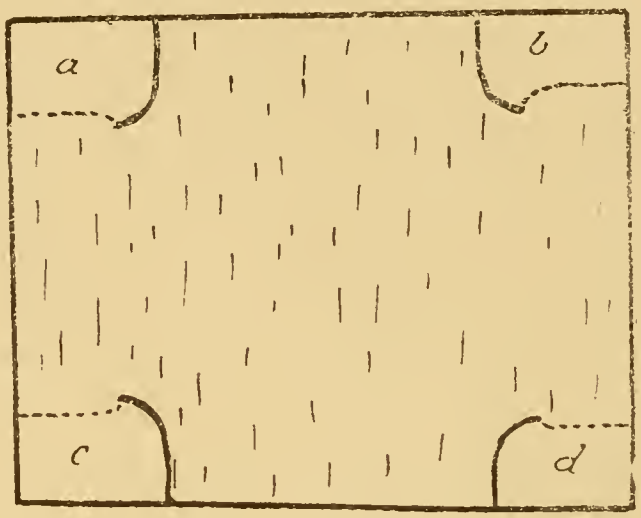

Fig. 115.

The vessel delineated in fig. 114 differs from the preceding in every particular except material and the setting of its rim. It is shallow, and almost rectangular in form, and the seams, instead of tapering from the corners to the centre of the ends as in the above described, remain confined to the corners. Fig. 115 will make it clear that its manufacture offers no serious difficulty. Here again the dotted outlines point to those portions of the bark which are cut off after the vessel has been sewed. As its main destination is to hold liquid, though but for a short time, whether this be water, grease, or berry juice, it is made perfectly water tight. Its native name is *t'sai*, a Déné root, which means tray, dish, or plate. The t'sai greatly vary in size, though they average a capacity of five gallons.

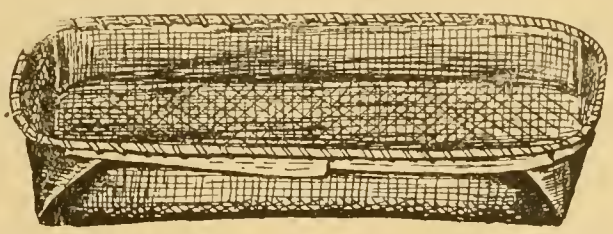

Fig. 116.

Very much resembling this vessel is the *t'ɔs-t'sai* or fish tray (fig. 116), which however differs not a little as regards both make and finish. It is without a single seam, the corners of the bark being merely folded up,

and the switch which encircles its rim is laid on the outside, instead of the inside, surface of the bark edges. This also lacks the thorough wattup wrapping of the rim, for which is substituted a spiral lacing of a coarser kind of spruce root. To prevent the thin birch bark from yielding too much to the pressure of the rim switch, a double lining consisting of two narrow strips of bark is applied against the vessel's edge both on the inside and on the outside.

It should be added that a few fish trays are also made with seams exactly as the common dish or tray (fig. 114).

The length of this vessel is generally double its width, which, in extreme cases, may reach as much as one foot and a half. It does service principally in connection with the daily net-fishing. The net, which has been left to dry during the day, is at dusk prepared for use at home, the floats and sinkers being there attached in their proper places. The whole is then carefully folded and deposited in this tray, after which the fisherman—or rather fisherwoman, since net fishing invariably devolves on the woman—proceeds to the spot in the lake chosen to set it. When it is withdrawn in the morning, two such vessels may generally be seen in the canoe, one destined to hold the fish, the other reserved for the net, which is folded therein as soon as drawn out of the water.

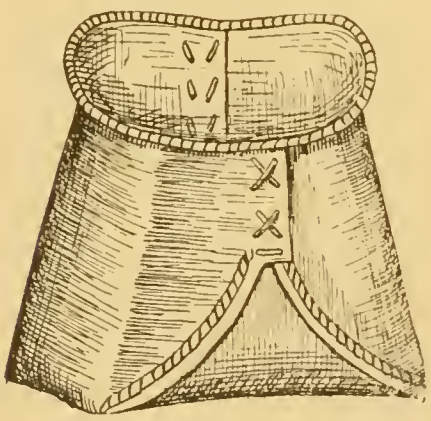

Fig. 117.

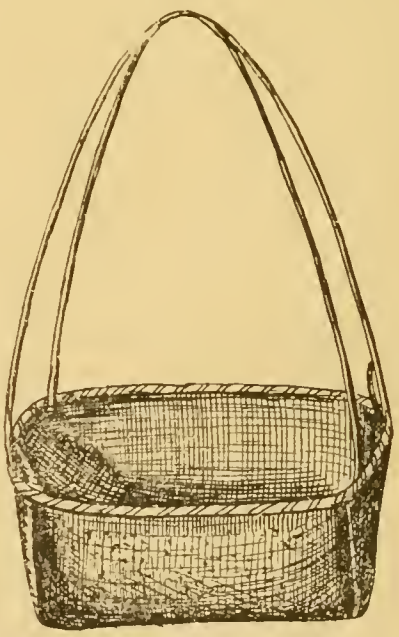

Fig. 118

No vessels of European or American manufacture have so far replaced any of the above described utensils. This is not the case with figs. 117 and 118, for which tin or copper vessels have long been substituted. The former, however, was still to be seen in actual use some ten or fifteen years ago. It was intended to keep water in; hence its Carrier name

thû-thel, "water-receptacle." This circumstance accounts also for its peculiar form—I mean the contraction of its upper part in faint imitation of the neck of a jar. Of course this vessel was made water-tight, the wattup used as thread being, after sewing, carefully pressed in with the finger previously coated with the balsam of the spruce (*Abies balsamea*).

The latter is the original Carrier kettle or boiler,* which is now altogether antiquated. It is seamless; the bark of which it is made has simply been folded up at its four corners and is so retained by means of a few stitches and of an encircling rod on the outside of the rim. Therein were boiled the roots, fish or meat of the family repast, and the aborigines are still loud in their praise of its excellence as a rapid boiler. Naturally enough, the frailty of its material required that care be taken lest it come in immediate contact with the flames. These primitive kettles were not only serviceable, but even much more durable than might be expected. In fact, their only part which was at all liable to get burnt was the wooden rim hoop, which had to be renewed from time to time.

On grand occasions, such as the famous "potlaches" or ceremonial banquets† so much in vogue among almost all the British Columbian tribes, large square boxes imported from the sea coast, were called into requisition. When filled with water and meat or fish, heated stones were repeatedly cast in until their contents were boiled.

The contrivance illustrated by fig. 119 consists of two parts, both of which are of spruce bark. Its object cannot well be understood without some details on one of the Carriers' most important industries, berry collecting and preserving.

Conspicuous among the various species of wild fruit which yearly ripens in profusion throughout their territory is the service berry (*Amelanchier alnifolia*). So important is it in their estimation that they generally call it merely *the* fruit, *mai*. At the end of every summer, the women gather immense quantities of it, first in their thel and then in their tcalyal wherein it is brought home. When not eaten fresh, seasoned, as a rule, with bear grease or salmon oil, the berries are kept for future use under the form of large, thin cakes resembling plugs of tobacco. They are then prepared by a process which, if primitive, is not the less complicated

As soon as the desired quantity of the fruit has been secured, the Carriers build on the ground, in a sandy spot, if possible, the below

---

* *Nusai*, sec. root. The name of the modern kettle is *usa'*.

† *Horwənəta*, "the going near" a verbal noun, which confirms what I have written elsewhere, namely that such feasts, no less than several other practices, are of recent origin among the Western Dénés.

delineated boiler and tray. They commence by digging a shallow excavation in the sand into which they lay one end of a rough bark tray, thereby obtaining an oblique inclination for the whole vessel, the lower end of which is alone folded up. Inside the upper half of the tray, a boiler of corresponding width and made of a large piece of spruce bark is erected and secured in position by three sticks driven in the ground on the outside of both boiler and tray. This boiler has no other bottom than that of the tray wherein it stands upright and wherewith it forms an obtuse angle. As a consequence of this last circumstance an aperture is left between the bottom of the tray and the lower edge of the front side of the boiler, that facing the projecting part of the shallow vessel. A few twigs are there deposited which will act as a strainer with regard to the escaping juice of the berries. Once the boiler has been filled up with the fruit, heated stones are cast in which have the double effect of pressing down and boiling its contents. The juice escaping in the outer part of the tray is transferred when necessary to another vessel. The berries in the

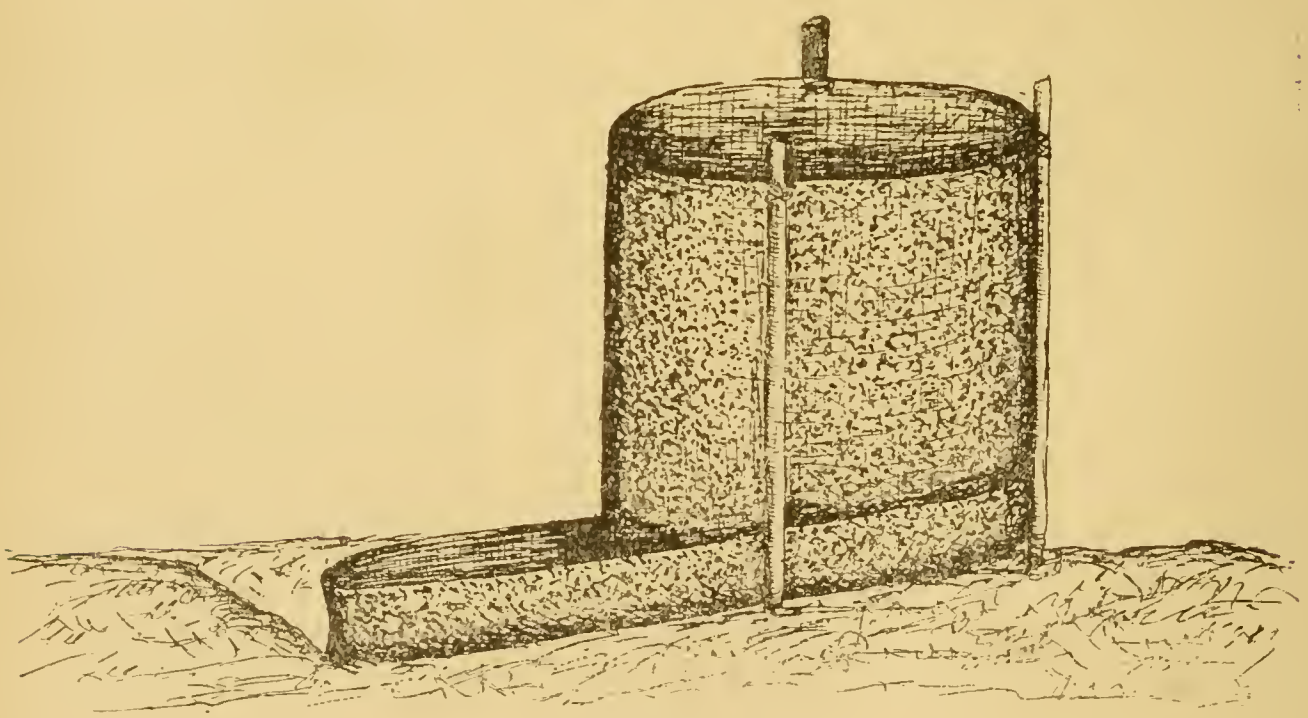

Fig. 119.

boiler having considerably sunk down and the stones beginning to cool, a new supply of both is thrown on top of the mash, which operation is repeated as long as the size of the boiler will allow. After all the juice has thus been extracted, the residue of the berries is thoroughly kneaded, after which it is spread out in thin layers on willow hurdles previously covered with heraeleum leaves, and then exposed to the action of the sun and air. By frequently sprinkling the mash with the juice of the berries and letting it dry until it attains the proper degree of consistency,

it finally coagulates into cakes of uniform thickness which are then stored away for future use. When properly prepared, these will keep for years and if sprinkled over with a little sugar, they are of tempting succulency even to others than Indians.

Esculent and Medicinal Plants.

Before proceeding further in our description of native utensils, it may not be irrelevant to complete our knowledge of the means of subsistence of the Western Dénés by a brief nomenclature of the other esculent berries, roots or plants they use as food, as well as of the chief medicinal herbs which they have, or had formerly, recourse to in case of bodily ailment. Their flora, such as represented in their vocabulary, is somewhat limited, inasmuch as, with very few exceptions, only such plants as have a place in their domestic economy are deemed worthy of a name. Question, for instance, a Tsiɬkoh'tin about the native name of a beautiful flower which may strike your fancy, and if it is not that of an edible or medicinal plant, he will look at you wondering if your mind is not getting unbalanced and ask you scornfully: "Do you think that we eat such a thing, that we should have a name for it?" A great many berries they do eat, and therefore honour with a distinctive name These, added to those already mentioned in the course of the present monograph, are:

The small, low-growing blue berry (*Vaccinium myrtillus*) which is common in dry, stony places, such, generally, as are wooded with the scrub pine. These are gathered in the autumn and either eaten fresh, when they are very succulent, or dried and kept until needed for use. In this latter case, they are first boiled in a common tin kettle, then thoroughly kneaded, and spread, without extracting the juice, over small trellis, much as is done with the mash of the service berries. Their Carrier name is *yən-thə-mai'* or ground berries.

A larger species of blue berries (*V. myrtiloides*) is also much sought after and treated, as a rule, as the small ground blue berries. Such is also the case with the swamp cranberry (*Oxicoccus palustris*) which, though rather scarce here, is none the less appreciated by the natives. The Carrier name of the former is *yaɬsəl*, a secondary root; that of the latter *əya'-kə-mai'*, or marsh berry, a noun of the third category.

Tətqe is a large, dark-colored berry, (*Empetrum nigrum*) somewhat acid and very juicy. When not eaten fresh, or seasoned with bear grease, whole basketsful of it are deposited in long trough-like vessels of spruce bark, tucked up at both ends so as to form provisional receptacles therefor. After they have undergone the usual kneading process, heated

stones are thrown over the mash until it has boiled long enough to prevent its deteriorating with age, after which cakes are obtained by drying on hurdles, as practised with regard to the service berry.

A species of high bush cranberry (*Viburnum paneiflorum*), in spite of its pungency, is also much appreciated by the native palate. It comes to perfect maturity late in September, and is generally eaten with bear grease. But when it ripens early enough, and when the service berries are not kept in dried cakes, it is mixed with them to render them more digestible. The service berry, when eaten alone, is rather heavy on the stomach, and the addition of the cranberries is intended to correct this drawback. The Carriers call the high bush cranberry *tsaɂtsé*.

The soap berry (*Shepperdia canadensis*), which is so unpalatable to a white man, is not the least esteemed of esculent berries among the Western Dénés. It is either eaten raw or dried for future use. In both cases, it requires some preparation to become edible. After it has been mashed in a tin or bark vessel and sprinkled with a little sugar to soften down its bitter taste, it is vigorously stirred with the hand until it springs up into a beautiful rosy foam—whence its name—which is highly appreciated, especially on a hot summer day. If not needed at the time the berries are collected, their mash is put in a spruce bark vessel and boiled by means of heated stones until nothing remains but the roasted residue of the fruit. This is now given the form of the usual plug-like cakes by spreading and drying on hurdles and finally stowed away. When these are required for consumption, they are put in a kettle, dissolved in a little water, and stirred with the hand as in the case of the fresh berries and with similar results.

Two other species of single berried fruit called respectively *tcitcéstetcé** and *noñtza* are generally eaten fresh. As far as I can guess, they belong to the genus *Viburnum*. The first, which grows only on mountainous soil, is black and resembles the service berry, but the natives claim that it is unknown to the whites. The second is a blue berry ripening on very tall bushes.

Nor should we omit in our nomenclature even the berry of the kinnikinik (*Arctostaphylos uva-ursi*), which is prepared for eating by roasting in a frying pan and mixed with salmon oil or the grease of any animal. Its native name is *tənih* in all the western dialects.

The natives also relish any species of edible—and sometimes to us non-edible—berries, such as the raspberry (*Rubus strigosus*), the straw-

* This name, though used among the Carriers, is of undoubted Tsé'kéhne origin.

berry (*Fragaria canadensis*), the black currant (*Ribes nigrum*), which the Carriers call "toad berry," etc. But none of these has the economic importance of those above enumerated.

Besides these and the bulbous roots *'ah*, *sûntî* and *əsroñh* which have been mentioned elsewhere, the Western Dénés find in their immediate vicinity several indigenous plants to diversify their daily *menu* of fish or meat. Chief among these may be quoted the red lily (*Lilium Columbianum*), the bulb of which is used as an article of food by most British Columbian and other American, or even Asiatic tribes. It is cooked by boiling pretty much as is done with potatoes. The natives harvest it almost as soon as it has sprouted out, a short time after the entire disappearance of snow. The Carrier and Tsi|Koh'tin name is *tsa-tcən* or "beaver-stick."

Another plant of a different botanical family whose root is likewise much appreciated as an article of food is the *səs* or sweet flag (*Acorus Calamus*). This root is eaten without any other preparation than cleaning and washing in cold water.

The wild onion (*Allicum cernuum*) is also eaten, root and leaves, either raw or slightly roasted in the ashes. The Carriers call it *t'|o-tsə'n*, "stinking grass." So is the root of the dog-tooth violet (*Erythronium giganteum*), which is reputed excellent by the natives. Its Carrier name is *tcilkhe-rez*, a compound word which is unfit for translation.

In the cow-parsnip (*Heracleum lanatum*), and a variety of the same (*kraz*, in Carrier) it is the inner part of the growing stalks which is preferred. It is often used while fresh and unprepared save by the stripping of its fibrous envelope. But if fire is at hand, a Carrier will generally treat it to a slight roasting through the flames previously to peeling off the stalk. The *H. lanatum* is the *kus* of the Western Dénés, a primary root, indicative of its importance in the estimation of the natives.

The marrow of the willow herb (*Epilobium angustifolium*) is also much esteemed, as is manifest from the nature of its Carrier name, Ras. It is eaten before the plant reaches maturity.

Nor do the Carriers disdain the leaves of the Oregon grape (*Berberis aquifolium*), which are simmered in a little water until no liquid remains. This plant, however, was formerly more sought after than is done by the modern Carriers, who call it *ə'tan-tcis*, "simmered-leaf."

Another article of food, cheap because very common, but not the least prized by the aborigines is the hair-like lichen (*Alectoria jubata*),

which grows hanging from most coniferous trees, especially the Douglas pine—hence its Carrier name *təh-ra*, "above-hair." The natives submit it, after gathering, to a thorough washing, till it loses its outer colouring matter. They next mix it with dough as one would do with raisins, and bake the whole. The lichen has then on the cake the same effect as would a copious application of yeast powder on a loaf of bread. The Carriers assure me that, thus prepared, it is very sweet and savory. Prior to the introduction of flour, they cooked it with grease.

Although the shaman's influence was great and his services frequently resorted to among the prehistoric Western Dénés, especially the Carriers, natural remedies such as provided by the vegetable kingdom were by no means despised by them. Nay more, their medical flora was rather extensive, and it may be said to their credit, that several of nature's most valuable secrets were no mysteries to them. Among the herbs or vegetable growths esteemed among them for their medicinal properties, I may mention the following :—

Tatlis (Polyporus officinalis), a fungoid growth from the Douglas pine. It was ground down into a fine powder and taken internally in a little water as a panacea against biliousness. According to the dose, it was a purgative or an emetic. It was very effective ; so effective indeed as to be really dangerous. For that reason it has been altogether discarded in favour of milder laxatives such as the bark of the elder *(Sambucus racemosus)*, which is pounded while fresh and taken in cold water.

The young shoots of two species of spruce *Abies nigra* and *A. balsamea*, were, and are still frequently, used as a febrifuge or against any kind of complaint resulting in cutaneous inflammation or eruptions. The shoots are thoroughly boiled and the decoction drank while warm.

A decoction of the boughs of the juniper bush *(Juniperus occidentalis)* is also considered effective against such maladies as fever or measles.

In cases of such cutaneous eruptions as particularly affect young children, the diseased part is thoroughly smeared with the mash of the swamp cranberry *(Oxicoccus palustris)*, and it is claimed that beneficial results never fail to follow within an astonishingly short space of time.

The root of the aspen *(Populus tremuloides)* thoroughly chewed and applied on cuts and bruises, is very extensively resorted to as a sure means of stopping bleeding. Excellent and well authenticated results have more than once attested its efficacy. In urgent cases, the bark of the tree is used instead of the root.

The root of two other plants *ʔi-loz-reh** a liliaceous plant, and the

* Lit. "Dog—urine—root."

heracleum, though of slower action, is nevertheless reputed effective against hæmorrhage from cuts. It is mashed fine, and a poultice of it is applied on the wound.

Infusions of the bark or leaves of the raspberry bush (*Rubus strigosus*) served as an emmenagogue, while the same parts—or more often still the wood with the bark—of the *Viburnum opulus*, a species of high cranberry, and of the bird cherry (*Prunus pensylvanica*), similarly treated, yielded a fairly good remedy against blood spitting.

They had also several tonics or astringents, among which figured: the wild cherry (*Prunus virginiana*), cold infusions of the inner bark of which were taken as a stimulant; the yarrow (*Achillea millefolium*) and the American sarsaparilla (*Aralia nudicaulis*), decoctions of which are still quite valued; the spearmint (*Mentha viridis*), which was used as a tonic against many ills, and last, not least, the Labrador tea (*Ledum palustre*), which, added to its medicinal properties, was often put to the same uses as to-day the tea of commerce.

In cases of swellings and non-running sores the Carriers use fomentations of the red willow (*Cornus stolonifera*) bark. For running sores and ulcers of any description they profess to have an excellent salve in the decoction of the bark of the osier-willow (*Salix longifolia*) and of the aspen mixed in equal quantities. The mixture forms a milky liquor wherewith the ulcers are first bathed and then rubbed over with the hand, thus causing the extraction of the humors.

Two species of horse tails, *Equisetum hyemale* and *E. pratense*, are valued as powerful helps against retention of urine. Decoctions of the herbs are drank freely until the desired effect is obtained. The leaves of the *uva-ursi* are also used as diuretics, but their properties may have become known among the natives through their intercourse with the whites.

One of the most effective of the native remedies is the *hwollak* (*Artemisia frigida*?) a sage-like plant which is used against local pains and nervous shooting. The leaves are laid over the heated stones of the sudatory, while the patient sits in a reclining position over the steam emanating from them. In extreme cases the leaves are applied while fresh directly to the ailing part of the body, but such are their caustic properties that they cannot be borne more than a few moments.

When no other remedy is available, the stalks of the black currant (*Ribes rubrum*) are cut in small pieces, boiled for some time and the decoction taken as a cough medicine.

To alleviate violent pains, they formerly had recourse to the bulb of

the hemlock *(Conium maculatum)* which they roasted over the ashes, and, after crushing with the hand, they applied to the ailing spot. But owing to the poisonous nature of this root, they now refrain from using it for any purpose.

Of special value to the women as a help after parturition was the *hwuɲɾəɲ*, a plant commonly known, I think, under the name of Devil's bush *(Fatsia horrida)*. The bark was mashed while fresh and taken internally with a few drops of water by women just delivered of a child, but whose after-birth had not been, or could not otherwise be, expelled. It did also frequent service as a purgative for persons of both sexes.

Even such delicate diseases as sore-eyes had in the Carriers' estimation a valued antidote in the vegetable kingdom. This consisted in a mixture of the root of the soap berry bush and of the wild rose *(Rosa blanda)* tree. After they had been stripped of their outside bark, the cambium like layer next to the wood was carefully scraped off, mixed with a few drops of clean water and delicately crushed with a flint or a knife till a sort of ointment was formed which was then applied to the eyes. Though sore eyes are by no means rare among the Western Dénés, no application of this sedative ever fell under my observation.

A few other plants or herbs are also used, the medical properties of which have been revealed to the natives by the H. B. Co. people or, later on, by the missionaries. But all those above enumerated are strictly aboriginal medicines.

OTHER BARK IMPLEMENTS.

We now revert to the bark implements. Two models of bark utensils differing slightly in form and much in use from those illustrated in the first part of this chapter are, or were, common among the Carriers. One is the trough-shaped vessel already mentioned as serving to bail in the fruits of the high cranberry. It is of spruce bark, of rude and temporary make, and resembles the *t'ɲs-t'sai* or fish-basket in every particular save that it is deeper. Though it occasionally serves as a boiler with regard to edible berries, it is more often used to cook for their oil the heads of salmon or other large fish.

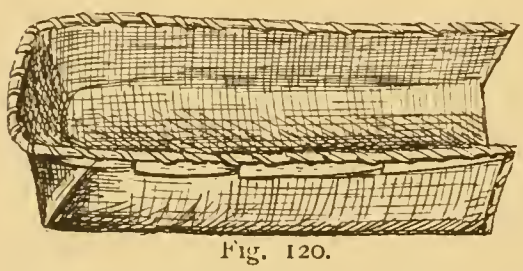

Fig. 120.

The last vessel of Carrier make which remains to describe is now a thing of the past. It was of birch bark, flattish and rectangular, and had but one narrow side (fig. 120). Its brim was, as usual, strengthened by the apposition of a willow switch running along its three sides. It served as a bathing tub for the infants

and, owing to its chief peculiarity, it had to be kept in a slanting position while in use.

The Carrier women originally carried their babes in regular cradles made of birch bark curved up at the narrow end as the basket-tray of our last illustration, save that this part was sewed, not merely stitched in one place as was the case with fig. 120. The bottom of the cradle was prolonged at the broad or open end to serve as a support for the head of the infant. Starting from both sides a hoop of willow half encircled at the proper distance the head of the child, and was intended to allow sufficient breathing room when it was deemed desirable to cover it. The necessary lacings were passed through a band of buckskin bordering the cradle on the outside.

With the advent of the whites these primitive cradles disappeared, to be replaced by the systematic swaddling clothes disposed as in fig. 121, which still obtain among the Carriers. Now, as in olden times, the lacing is done with one string passed through bands of cariboo skin ornamented according to the fancy of the mother. This string is so arranged that by pulling both ends the swaddling envelope is drawn up over the feet of the babe. Progressive mothers—and they form the majority—nowadays substitute for this tightening device strips of cariboo string buttoned at either end over each side of the swaddling clothes.

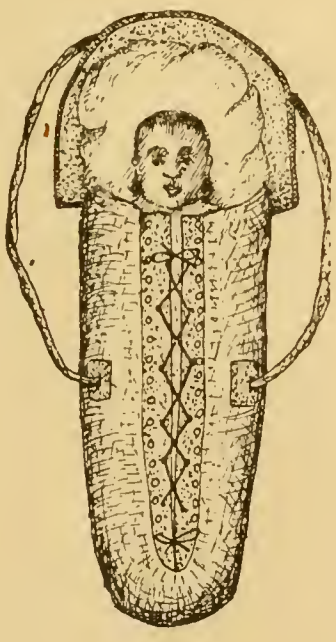

Fig. 121.

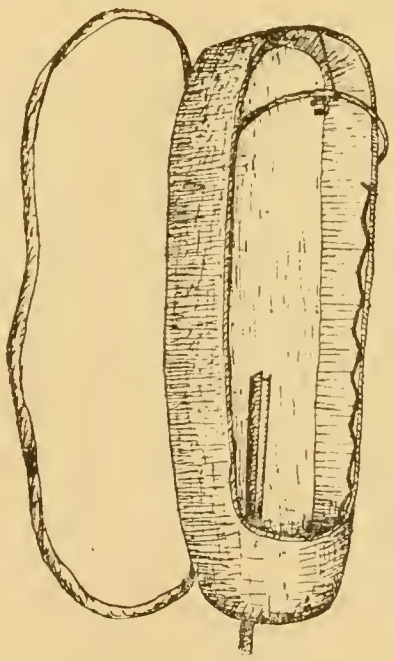

Fig 122.

The Tsiɬkoh'tin have preserved to this day their traditional baby-baskets or cradles, of which fig. 122 will give a fair idea. They are made of the twigs of a species of willow, and their bottom is generally

strengthened by the addition of a board. The framework when completed is thoroughly concealed beneath a closely-fitting covering of deer hide sewed on the sides of the basket. As in the original Carrier cradle, breathing room is afforded by means of an osier hoop from which toys or playthings, beaver teeth or nails, etc., hang in sight of the child.

One peculiarity which I think is proper to the Tsi|Koh'tin baby baskets is the bark conduit which may be noticed in our illustration and whose end is to preserve the infant against moisture, and also to reduce to a minimum the trouble consequent upon bringing up such small children.

As the styles of baby cradles differ according to the tribe, even so it is with the mode of carrying them. A Carrier mother carries her child hanging perpendicularly on her back by a strap running across her shoulders and breast, while the Tsi|Koh'tin women carry their baby horizontally on their back and suspended in its cradle by a tump line passed athwart their forehead. In this they simply conform to the custom of their southeastern neighbours, the Shushwap.

The Tsé'kéhne vessels do not materially differ from those of the Carriers, and their mode of treating and carrying the Tsé'kéhne babies tallies also with that of the latter. But the household vessels of the Tsi|Koh'tin have no point of resemblance with any of those I have thus far described. No bark vessels are seen among them, as they replace bark by regular basket-work. I regret my inability to present the reader with an accurate description of their root weaving process. Yet, if memory serves me right, I think that they coil, not twine, the root according to the method illustrated by Prof. O. T. Mason in the Smithsonian Report for 1884 * and elsewhere. However, all the household utensils I have seen among the Tsi|Koh'tin are broad-mouthed and wallet-like, none of them tapering up as some of the specimens quoted by the learned professor.

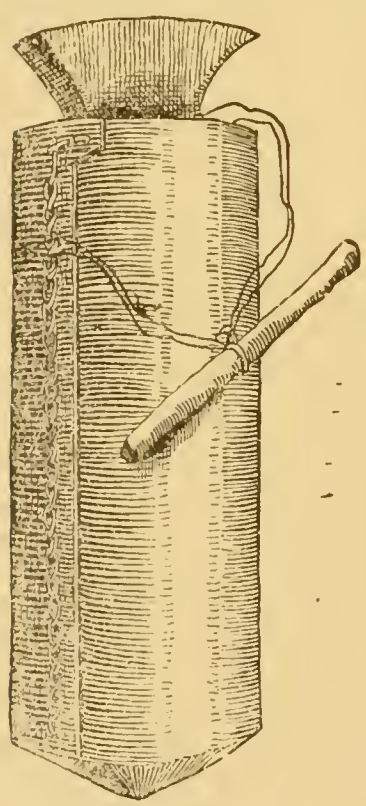

Fig. 123. ½ size.

Their water vessel, the form of which I remember well, is similar to that illustrated on page 18 of Dr. G. M. Dawson's "Notes on the Shushwap people of B. C.," † save perhaps that it is not quite so narrow at the bottom. Many of them are elaborately orna-

* Ann. Rep. Part II., p. 294, plate V.

† Trans. Roy. Soc., Canada, Sect. II., 1891.

mented with geometrical or animal designs. They are generally of about seven or eight gallons capacity.

A second vessel (*t'ɲasqaz* in Tsiɬkoh'tin) much smaller and pan-shaped, does duty as a washing dish and receptacle for cooked food principally the starchy bulbs *suntî* and *əsroñh*.

A third is elliptical and of about the same diameter across its breadth.

It is used as a washing-tub wherein the babies are made to stand naked to be washed every evening by their mothers.

Before we close this chapter, we should not forget to mention the birch bark *tsa-yu-thej* or castoreum bottle (fig. 123) such as it is used among the Carriers. The object of that implement has already been explained.‡

‡ In the chapter on Bone Implements.

CHAPTER VIII.

COPPER AND IRON IMPLEMENTS.

COPPER IMPLEMENTS.

Rev. E. Petitot, arguing in favor of the contemporaneity in the same part of America of the bronze and the iron ages with the palæolithic and the neolithic epochs, has the following to say :—

"Avant l'arrivée des Européans dans la vallée du Mac-Kenzie, les Couteaux-Jaunes et les Flancs-de-Chien connaissaient l'usage du cuivre natif qu'ils trouvèrent sur les bords de la rivière Copper-mine. Ils s'en fabriquaient des couteaux, d'où leur est venu leur nom. Ils faisaient en même temps usage de la pierre polie. Donc nous avons ici contemporanéité de la *pierre polie* et du *bronze*. De leur côté, les Peaux-de-Lièvre, qui ignoraient le cuivre et qui ne se donnaient pas la peine de polir leurs instruments de pierre, avaient découvert le long du Mac-Kenzie, à l'embouchure de la rivière *L'é-ota-la-delin*, du ferologiste, et ils en fabriquaient des aiguillettes et des alènes de quatre pouces de long qu'ils troquaient avec les Thekkáné et autres tribus méridionales des Montagnes Rocheuses contre des peaux d'élan à raison de dix pour une alène." *

It is likely that most archæologists will refuse to concede that the use of copper knives by a savage people entitles the makers to be regarded as having reached that stage of industrial advancement commonly called the bronze age. The use of copper is in this case too limited they will probably say. This reason, plausible as it certainly appears at first, is after reflection rather more specious than convincing. For was not this the case even in the old world? Were not stone weapons largely used there contemporaneously with copper or iron implements? No, answers the antiquarian; each epoch or age was very distinct and strictly consecutive.

Let us see.

In Italy, C. Geikie found early uncoined money (*æs rude*) along with polished stone weapons; and a number of flint knives have been obtained from Etruscan graves. Indeed a piece of coined copper money marking

* *Rapport succinct sur la Geologie des vallées de l'Athabaskaw—Mackenzie et de l'Anderson*; Paris, A. Hennuyer, 1875.

a still later period has been found in an Etruscan tomb alongside with a stone knife. At Bibracte, the most important town of the Ædui in ancient Gaul, scientific exploration has brought to light work on metal and coins mingled with flint arrow heads, polished stone axes and a flint knife. Similar discoveries have been made in many places throughout France.* In ancient Egypt, stone and metal implements were also used contemporaneously.† In the centre and south of modern Africa, the negroes, according to Lenormant "have never known bronze, and work hardly any copper. Instead of this, they manufacture iron wares in large quantities and for this purpose make use of a process which was not communicated to them from the outside. Hence they themselves discovered the method of manufacturing iron, and when they gave up the use of stone implements, they passed to the manufacture of this metal."‡

These few instances chosen among many others will, I hope, suffice to prove that the sharp and almost instantaneous change from one age to another and the strictly successive order generally believed to have been followed in these transitions are, in many cases, more fancied than real. Metal objects were apparently the property of the leaders and the higher classes generally while the lower classes must have contented themselves with the stone equivalents, just as in the Middle Ages only the knights wore steel armour.

That copper and iron were to be found among the Carriers long before these aborigines even suspected the existence of the whites there can be no doubt. But the use of these metals was, of course, restricted to a few fancy objects or working tools. Moreover, in so far at least as that tribe is concerned, neither copper nor iron was indigenous and the former metal only was wrought by its members. Concerning its introduction among the Carriers, I take the liberty of reproducing here a short native legend which I have already quoted elsewhere.§

"In times not very remote, all the Indians (themselves among the rest) congregated at a certain point of the sea coast, around a tower-like copper mountain emerging from the midst of the water. Their object was to decide which tribe should become the possessor thereof. When all had united in shouting, the mountain began gradually to totter, and the Haidahs who are blessed with big heads and strong voices caused it

* See "Christian Anthropology," New York, 1892, p. 324.

† Ibid.

‡ "*Die Anfänge der Cultur*," vol. I. p. 57.

§ "The Western Dénés," Proc. Canadian Institute, 1888-89.

to fall on their side. 'Thus it was,' they add, 'that those Indians secured the copper mountain, and we have ever since been obliged to have recourse to them for what we require of that metal to make bracelets for our wives and daughters.'"

The reference to this wonderful towering mountain of copper, fantastic as it may appear, might perhaps be explained by the existence of the monumental Pillar Rock on the shore of Graham Island, a sketch of which will be found in G. M. Dawson's Report on the Queen Charlotte Islands.* Even in prehistoric times, some Carriers had evidently visited the Pacific Coast, as may be inferred from a few of their legends wherein some peculiarities proper to that region are introduced with a tolerable amount of accuracy. On the other hand, as most of their copper was imported from the coast, it was but natural that, according to the custom of primitive peoples of assigning a fabulous origin to extraordinary objects, they should associate in their narrative the wonderful pillar-rock with the no less wonderful yellow metal.

I might point here to the adventures of a mythic Carrier, a sort of wandering Jew, who underwent many a stirring experience on the Pacific Coast while in quest of a stolen wife, and who is the first personage mentioned as possessing copper. The fact that the possibly historical data hidden amidst the details of that legend are interwoven with many miraculous circumstances, would lead us to suppose that the knowledge of that metal among the Western Dénés dates back from a rather remote epoch.

Be this as it may, I have never met with more than five kinds of copper objects of genuine Carrier or Tsiqkoh'tin manufacture. These

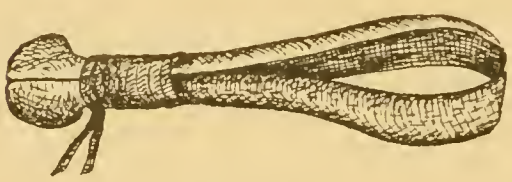

Fig. 124.

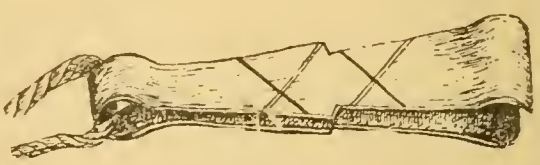

Fig. 125.

are the hair tweezers, the bracelets, the finger rings, the harpoon tips and the dog collars. The hair tweezers† were originally of cariboo horn. They then consisted of two thin pieces of horn given the required shape by means of heating, and tied together at one end with sinew threads (fig. 124). The copper tweezers were of one piece and affected the form represented in fig. 125. The object of both was to remove any super-

* Montreal, 1880; plate ii.

† *T'sa-anta*, "grebe-bill," a noun of the third category.

fluous facial hair. "Superfluous" should be understood here as synonymous with "any" hair growing on the lips, the chin or the cheeks, since the Western Dénés kept themselves beardless. The prehistoric Tsé'kéhne, if they are to be judged by their immediate successors, the eldest among the modern Tsé'kéhne, indulged in the possession of a queer looking partial moustache, which was obtained by leaving untouched the hair growing on the upper lip below, and exactly corresponding in width with the septum, while on both sides the lip was otherwise free of hair. The tweezers were worn on the breast, hanging from the neck. They are still to be seen among the Tsiɪkoh'tin and the Tsé'kéhne.

The Carrier *na-lthan* * or metallic bracelets (fig. 126) were of an exceedingly simple pattern. As the hair tweezers, they were originally of cariboo horn; but as commercial relations became more extended, copper was soon preferred in their manufacture. In later times pewter was even adopted and beaten to the desired shape out of the spoons of commerce. I speak in the past time, because among the Carriers especially, such trinkets are now practically unknown.

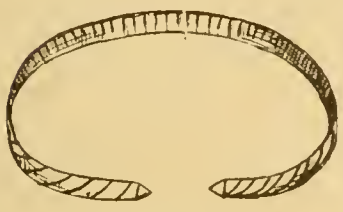

Fig. 126.

When bartered from the Coast Indians, the copper was generally in sticks or slender bars, which were then wrought by hammering by the Carriers. These bars remain almost unaltered when used to give consistency to the collars of their dog-harnesses.† When not ornamented, these harnesses are probably similar to those in use among the eastern Indians, and as such would hardly deserve any mention. But the Carriers' fondness of parade has long prompted them to add to the original pieces the blanket and collar ornaments which I have thought worth the while to show in fig. 127. Of course these two additions are detachable paraphernalia, which are not generally used, except when reaching or leaving a village. The frame of the upper parts is of copper.

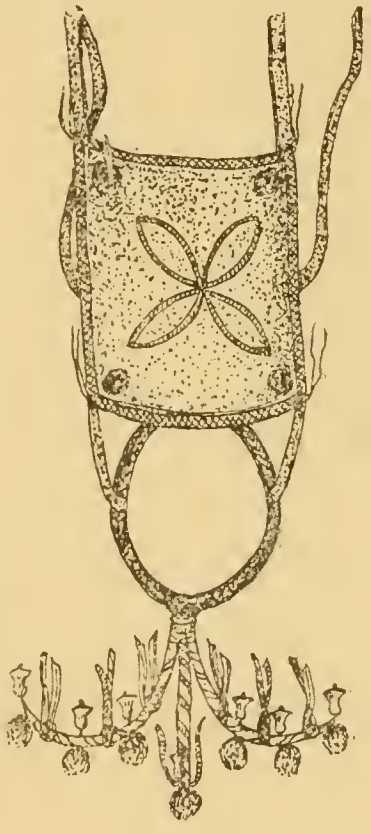

Fig. 127.

* Lit. "it (of a heavy material) is around."

† *ʔi-t'ɲɥ*, dog-ropes, 3rd cat. nouns.

Fig. 128 can be adduced as a further evidence of that power of imitation which I have more than once quoted as one of the characteristics of the tribes under study, especially the Carriers. Finger-rings,* it is hardly necessary to say, were unknown among the primitive Dénés; but they no sooner became aware of their existence among the whites than they set upon fabricating them with whatever material at their command. One of the results was the ring sketched above which has been found here, Fort Saint James.

Fig. 128.

IRON IMPLEMENTS.

Whether hematite was known to the Western Dénés prior to their contact with European civilization cannot well be ascertained at the present time. It would seem highly probable that it was among all the tribes but the Carrier, which to-day has no other word for "iron" or iron ore than that used for "knife." Even among the Tsé'kéhne, who call a knife *pés* and iron *tsa-tsoñe* (beaver-dung), it is very doubtful if they ever subjected hematite to any treatment calculated to reduce it to the shape of a working tool. Yet I think I am warranted in asserting that iron implements have been known and used even among the Carriers for at least two centuries, that is one hundred years before they had heard of the whites. The memory of the appearance of the first iron axe at this place (Stuart's Lake Mission) has been kept vivid to this day by the descendants of its original possessor. Their narrative, when shorn of a few excrescences, I believe to be historically true, inasmuch as names of persons and of localities, together with minute particulars connected therewith, are freely mentioned. Their veracity is made still more apparent by the genuine and unbroken genealogy of the present chief of this village up to the first possessor of the marvellous implement. A full account of the deeds of the various personages introduced in the chronicle might prove not uninteresting even to the general reader. For the present I shall content myself with its initial chapter. The chief of Stuart's Lake will be our narrator.

"The first man (*i.e.* Carrier) who ever possessed an iron axe was my grandfather (*i.e.* one of my ancestors). His name was Na'kwəl, and, owing to his rank as one of the most influential notables, but more particularly on account of the great age he attained, he has remained famous among us. He was so old when he died that his hair had turned yellow, after having long been snow-white. He was a most irascible man and

* *La-thəl'tə*, "passed round the finger."

therefore much feared. What his age was when he got the iron axe I cannot say. He must have been a grown-up man and full-fledged "nobleman," since tradition tells us that upon receiving it, he convoked a large crowd of Indians of clans differing from his to a grand ceremonial banquet. Now this can be done only by a təneza· or nobleman. On that occasion, the iron adze-blade was suspended from a rafter over the heads of the invited guests so that they might have an opportunity of contemplating it at ease. The implement was considered exceedingly precious. It had come from some unknown place in the direction of Tse'tcah.* It was thereafter taken great care of, and its possession was the means of considerably enhancing my grandfather's prestige among his fellow Carriers.

"Yet it was lost one day under the following circumstances. Some men of Na'kwəl's family were in the woods cutting spruce branches to cover up the doorway of the winter lodge they were erecting, when the skin line which fastened it to its handle as an adze getting loosened, the blade suddenly dashed off and fell among the branches already cut. By searching among these, the implement must have dropped down in the snow, for it could never be found by natural means that winter."

The story then proceeds to relate how it was subsequently found through the incantations of a medicine man who was richly paid for his trouble, and concludes thus: "This happened a very long time ago, long before my forefathers had heard of the whites."

That this is a fact is shown by a few words attributed to Na'kwəl which, though still intelligible, are nevertheless quite archaic, and also by the following genealogy of Na'kwəl's posterity.

1. *Na'kwəl* must have lived at least two or three scores of years after the acquisition of the iron axe, when he died and was succeeded in a genealogical point of view by

2. *Tcitcanit*, his youngest son, who had two wives and being of a jealous disposition, was secretly drowned by them when in declining years.

3. Tcitcanit was succeeded as *təneza·* or nobleman by a maternal nephew named *Tsalekuɣé*. This personage killed a man with an iron pointed lance, and was himself killed when he was getting much advanced in years.

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* Near the Skeena river. See the map accompanying my paper, "Are the Carrier Sociology and Mythology Indigenous," etc.? Trans. R. S. C., Sec. II., 1892.

4. His successor was *Kwah*, who made war and slaughtered hosts of Lower Carriers. By a second wife he had

5. *Atsuʃ*, a second son, who died five years ago, over one hundred years old, since he remembered the arrival of Sir Al. Mackenzie's party in the country. He left three generations of descendants.

Reference has been made to a prehistoric iron pointed spear. Tradition furthermore records the killing, in ante-European times, of a cariboo with an iron or steel knife or dagger. This happened on this lake, some 15 miles from here. Below, the reader will also find figured a steel dagger which came into the possession of the Carriers some 110 or 120 years ago—their country was discovered in 1793. It was instrumental in killing several men and was originally much larger. The handle was also of a different description, the knife being one of a class of steel daggers called in the dialect of the Babines *t'ʃak-nanist'sər*, or "rounded at the end" (of the handle). It probably resembled the instrument represented by fig. 108 *e* of Niblack's "The Indians of Southern Alaska."*

Fig. 129.

The presence of steel implements, even so early and so far away in the interior of British Columbia, is not calculated to disconcert the archæologist, considering the frequent intercourse the inland tribes had from time immemorial with the Coast Indians. Both Cook and Dixon ascribe the introduction of such tools among the Coast tribes to the Russians whose first recorded expedition on the Northern Pacific Ocean dates from 1740. But Na'kwəl's iron axe cannot evidently be attributed to the influence of the Russians, since it had apparently reached this place long before I. I. Behring's expedition was fitted out. Coast Indians must naturally have been slow in parting with such valuable implements. Moreover it should not be forgotten that not more than fifteen years before the advent of the whites among the Carriers, iron tools were still so rare among the Coast tribes that in 1779 a Captain Gray master of one of the Boston trading vessels, is reported to have got at Nootka, on Vancouver Island, two-hundred otter skins worth about $8,000 for an old iron chisel!†

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* Ann. Report, National Museum, 1888.

† Christmas No. of the Victoria "Colonist," 1891.

Among the steel implements distinctly Déné in manufacture and actually in use among the Carriers, are the hole-borer or drill, the moose skin scraper and the crooked knife or spoke-shave.

Ffg. 130

The first is made with a nail or any available piece of iron securely lashed on the side of a stick or fastened in a slit at its extremity. Occasional holes are obtained by rubbing the drill between the hands while strenuously pressing down the implement. But when a set of fine holes, such as those of the snow-shoes, is desired, the Carriers have recourse, in addition to the borer, to a small bow and a hard piece of wood which they manage as shown in fig. 131.

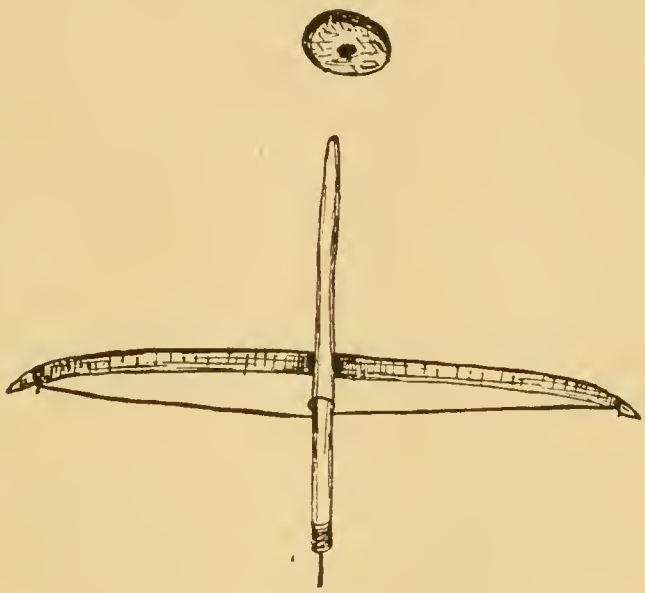

Fig. 131.

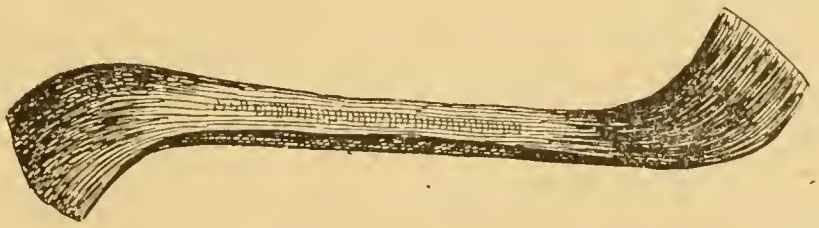

Fig. 132. ½ size.

The name of the tool shown in fig. 132, *ûnrwəl*,* or moose skin scraper, explains its *raison d'être.* It has been patiently ground down to its present shape from an old file.

* Second category of nouns.

Identical material and mode of manufacture have likewise resulted in the accompanying spokeshave or *ərəs*, the "drawknife." It is of the greatest usefulness to the modern Indian, so much so that there is not a house among the Carriers wherein it is not to be seen. They employ it to finish the inside of their canoes, to shave off the rods used in the construction of their fish-traps, to fashion the side and transversal sticks

Fig. 133. ½ size.

of their snow-shoes, and to do almost any kind of manual work in connection wherewith a white man would use a draw-knife or even a common pocket knife. The lower grade of *ərəs* is made of the blade of a table knife. The handle of the specimen above illustrated is of cariboo bone, secured to the blade first by copper wire and then by rawhide lines wrapped around. The whole tool is of native manufacture.

CHAPTER IX.

Skin Objects and Twined and Textile Fabrics.

SKIN OBJECTS.

Under this head we will consider any native items wherein dressed or undressed skin enters as the chief component part.

Passing references to the treatment of hides have already appeared in the course of the descriptions of the implements used by the Western Dénés to free them of hair, fat or blood. It now merely remains with me to add that after the skin in preparation has been rubbed over with the brains of the animal, it is allowed to pass a whole night steeping in cold water. It is then subjected to several rinsings in hot water, alternating with thorough scrapings, until, being quite dry, soft and pliable, it is given the form of a bag and placed over the smoke of decayed wood or other vegetable matter. Once it has been thus smoked on both sides, it is ready for use.

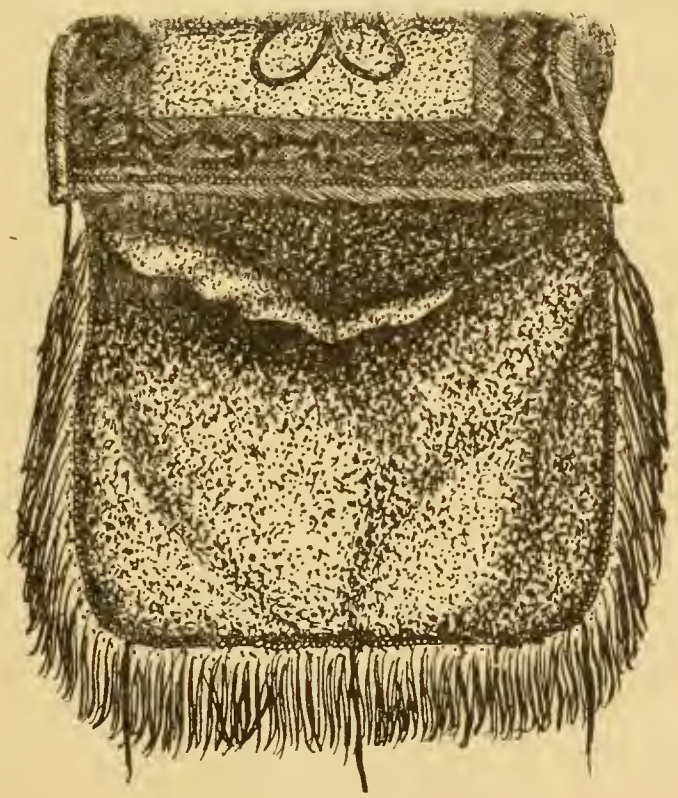

Fig. 134.

Among the Tsi[Koh'tin skin dressing is practically confined to the hide of the deer, while among the Tsé'kéhne moose and cariboo skins

only are tanned for use. Moose is rare within the Carriers' territory, and still more so is the deer. Therefore, with that tribe, mocassins, mittens and gloves, bags, etc., are almost exclusively of cariboo skin. We will here pass over skin articles, which belong to the native accoutrement or wearing apparel, as these shall be treated of in the next chapter.

Confining ourselves to household or non-personal objects, we may mention no less than seven varieties of leather bags or pouches in use among the primitive Carriers. Fig. 134 represents the household bag or *eztjai*. This is generally the property of women and serves to contain the family chattels, but more particularly such as are proper to the women, clothes, pieces of tanned skins, working tools, articles of ornamentation, etc. This bag needs no description ; the cut cannot but give an exact idea of its form. The bead work in some is much more elaborate than in the specimen herewith figured. Before the introduction of glass beads, dyed porcupine quills served to ornament this and all other kinds of skin receptacle. The cover piece of this *eztjai* is also, I am told, a modern innovation. This bag is never used as a packing contrivance.

A variety of the same, but much reduced in dimensions, was formerly the regular badge of widowhood among Carrier women, so much so that the custom which required its use has given the Carriers their distinctive name. Among them cremation was the national mode of disposing of the dead. As a rule, on the morning following the funeral ceremony, the relatives of the deceased, accompanied by his widow, were wont to pick up from among the ashes of the pyre the few remaining charred bones which, if too large for the purpose in view, they did not scruple to reduce by breaking to the desired size, These were then handed to the widow to daily pack till her liberation from the bondage consequent on her new condition. This gruesome task devolved on her for the space of at least two or three years, and in extreme cases was prolonged to a period of some five years. Upon the final giving away of property which was the signal for the cessation of mourning, these bones were deposited with the satchet containing them in a box laid on the top of a funeral column near the village.

Some of these satchets were still in existence a few years ago. Their cover, instead of fitting over the whole bag as in the household *eztjai*, reached only half way down. Its sides were also sewn with those of the satchet itself, so as to preclude the possibility of its contents being accidentally thrown out. Of course, a string was attached to the satchet and passed across the neck or or breast of the packer. A lining of birch

bark also gave the receptacle a certain degree of consistency, and served moreover as an additional protection for the bones.

The regular packing wallet* herewith figured is still very generally used for carrying provisions during long journeys and might be termed the native buffet. It is of two different materials ; its main parts are of undressed moose hide with the hair out, while its sides, top and bottom are of tanned cariboo skin. The skin of the upper part of the legs of the animal is chosen in preference and sewn together, as may appear from a glance at the illustration below. The packing band is also of untanned moose skin. On either side of the bag, ears of tanned skin are pierced each with two holes, the lower one of which is intended to receive the strap when the walllet is not full. The broad or middle part of this line passes athwart the forehead of the packer, and, after sliding through one of the holes at either side of the bag, its loose ends are drawn forward and tied over the breast, so that the position of the burden can be changed at will.

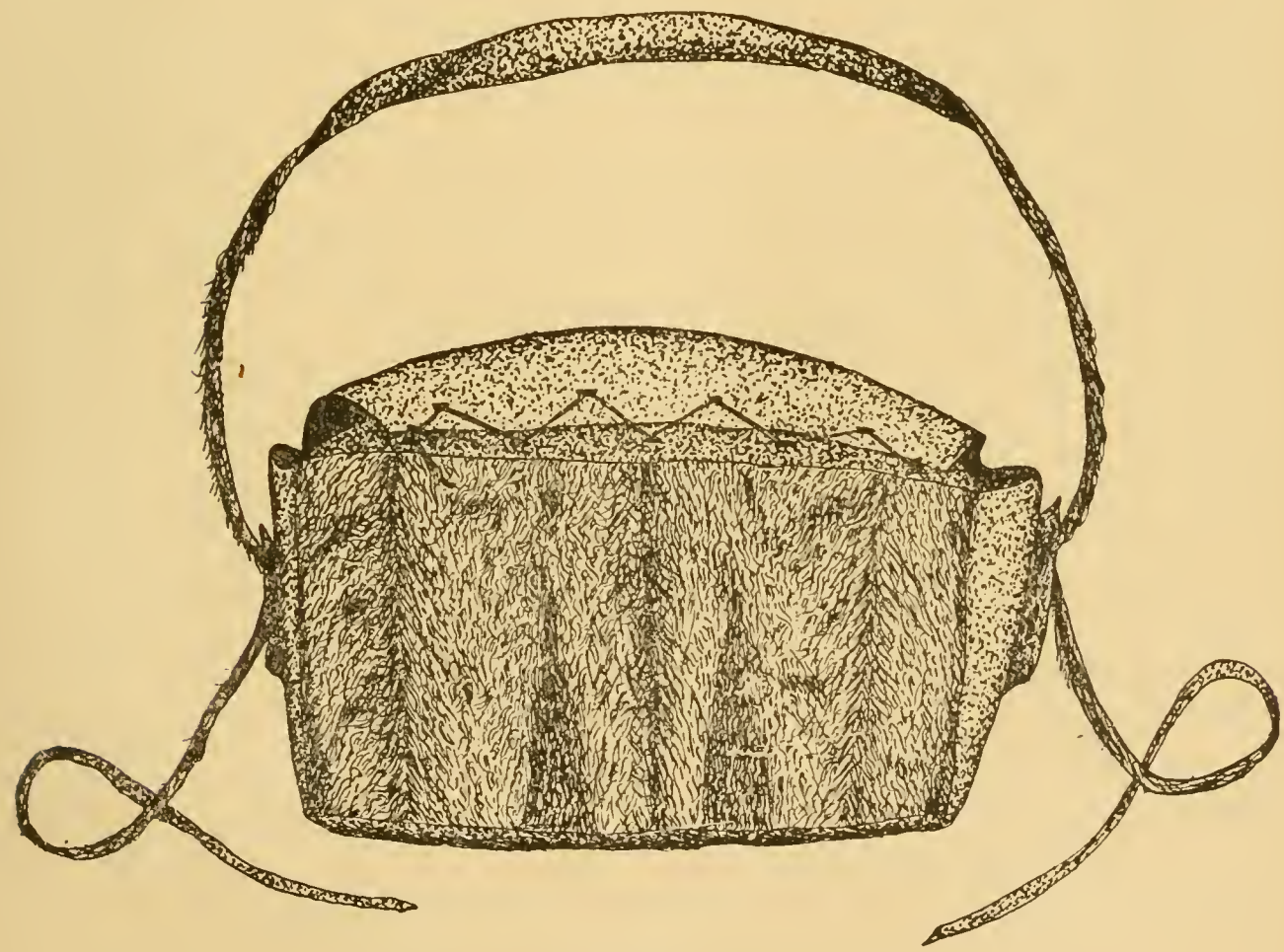

Fig. 135.

* Ɂu'kéz, sec. root.

Not uncommonly these wallets or knap-sacks are made entirely of dried salmon skins sewn together. Once the flesh of the fish has reached the proper degree of stiffness, it is carefully torn off and one of the skins is shredded into fine filaments which serve as thread.

The *ɣu'kéz* generally does duty in connection with heavy burdens, which means for anybody *au fait* with native sociology that it is the appanage of the women. The men have also a packing bag of their own intended as a receptacle of such light burdens as are incident to short trips, and which shall be described further on.

The fourth variety of leather bags is the dog-bag, which is so much like a common saddle-bag that I refrain from figuring it here. No harnessing device is connected with it, it is simply lashed on the sides of the canine with a separate line.

Fig. 136.

Fig. 136 also represents a double-bag; but this is proper to the huntsman. In one end of it he keeps his provision of powder, and in the other that of shot or balls. Both halves of the bag are shut by tying around the strings attached immediately below the common or middle opening. Out of this ammunition pouch the huntsman fills up as often as necessary his powder horn, and his ornamented shot pouch which are parts of his accoutrement.

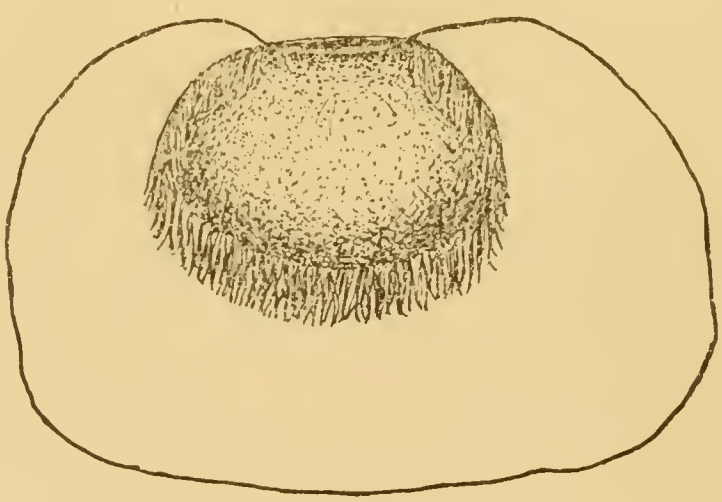

Fig. 137.

Here we have a *Kwən-zəz* or fire-bag. Its use has ceased with the introduction of matches, and its name is now given to a small pouch of different pattern, though somewhat similar in intent. The former served to carry about or keep at home the tinders and parched hay originally

required to start a fire with the fire drill or more recently with the fire steel. Its elliptical form was probably intended as a help in guarding its contents against rain or moisture. As an additional measure of precaution, the pouch was generally carried under the arm pit suspended from the neck.

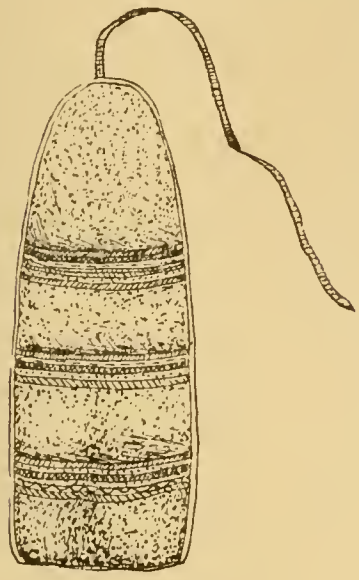

Fig. 138.

Its modern substitute is of common cloth in the form of a flour sack and with two strings so arranged at its mouth that the pouch can be shut by drawing them apart. Matches and tobacco with a pocket knife are generally the only things kept in this Kwənzəz.

Fig. 138 represents a needle and thread pouch. Although originally of tanned skin it is now almost exclusively of black or blue cloth trimmed with ribbons or coloured tape.

To complete our list of skin objects of Déné manufacture, we should add to the above the *pe-s̄ta* (wherein one sits), a sort of cuirass in use in prehistoric times especially among the Carriers. It had the form of a sleeveless tunic falling to the knees, so that it protected the whole body, since those aborigines generally shot kneeling. Its material was moose skin which, when sewn according to the proper pattern, was soaked in water, then repeatedly rubbed on the sandy shores of a stream or lake and dried with the sand and small pebbles adhering thereto, after which it was thoroughly coated with sturgeon glue. Being again subjected before drying to another rubbing over sand, it received a new coating of glue, and after this process had been repeated three or four times, it formed an armour perfectly arrow proof.*

* In his *Appendice relatif aux armes de pierre des Indiens arctiques* published in 1875, the Abbè E. Petitot, speaking of the Dénés of the Mackenzie Basin, says that "ces Indiens arctiques prétendent qu'ils n' ont pas toujours habité sur le sol où nous les avous trouvés, mais qu'ils ont vècu, à une époque fort éloignée, dans une patrie plus belle que la présente. . . . Dans cette terre . . . bien tour dans l'occident, un peuple puissant opprimait les Loucheux et les Peaux-de-lièvre. Ce peuple se rasait la tête, portait de faux cheveux et se coiffait de casques. . . . Ses guerriers se couvraient la poitrine d' une tunique de peau d' élan revêtue d'une foule de petits cailloux coagulès en manière d' écailles (cuirasse); ce qui les rendait comme invulnérables à leurs traits. . . . A cette époque les Déné-Dindjiés faisaient, disaient-ils, usage de lances, qu' ils m' ont dépeintes comme des couteaux fixés par une ligature au bout d' une perche; d'épieux, sorte de cornes munies d' un crochet et également emmanchées; d' arbalétes; de dagues, et enfin de boucliers." Then the learned missionary adds that "*aucune de ces armes offensives et défensives. . . . n'a suivi les Déné-Dindjiés en Amerique.*" The italics are mine, and it is hardly necessary to remark that the line thus pointed out would never have been written had its author been acquainted with the original Carrier sociology. For, as

OBJECTS OF MIXED MATERIAL.

As may be seen by figs. 139 and 140, the Déné drums, though possessing minor characteristics of their own, do not essentially differ from the tambourines in universal use among the North American Indians. In every case we have merely a dressed skin—which is here of cariboo—stretched ove a narrow hoop. The Carrier drum (fig. 139) not only had no bottom strings, but its makers even dispensed with any cord as a means of holding the instrument. The same piece of skin in which almost consisted the whole drum was cut on the reverse or back side into four strips tapering to the centre into regular strings which were knotted as shown above, *b*, and which served as a means of grasping the instrument.

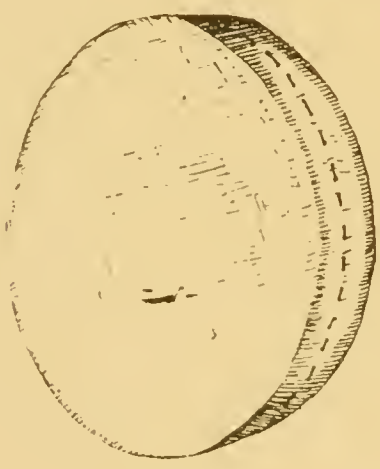

Fig. 139 *a*.

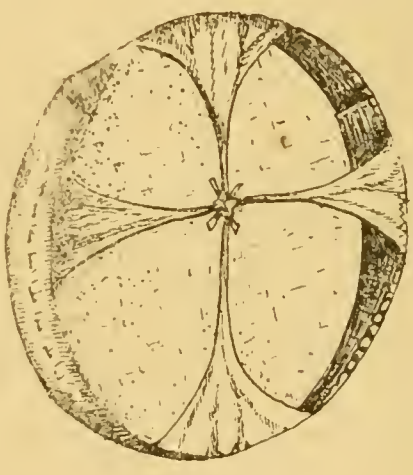

Fig. 139 *b*.

The Tsé'kéhne drum (fig. 140) though apparently a very simple piece of workmanship, evidences much greater ingenuity on the part of its contrivers. Not only does it possess the bottom strings designed to enhance its sonorousness, but these very strings are so disposed that they help not a little in using the instrument. After passing beneath the frame of the drum they are drawn up over it under the encircling skin, and again introduced through the middle of the hoop from which they protrude inside in the shape of a loop through which the thumb is passed

---

a matter of fact, all the arms and defensive weapons above enumerated had their counterparts on this side of the Rockies but a short time ago. In that "skin tunic covered with small coagulated pebbles," we recognize, of course, the *pe-šta* just described ; the lances regarded by Petitot, after his informants, as so very ancient were the *sarthaz* spoken of on page 62 ; the épieux or spears are not materially different : Petitot describes them as "hafted hooks" and it so happens that the Carrier name of these weapons means "hook-sticks." The cross-bows we have likewise seen in use among the Tsé'kéhne, while the daggers and the shields were no less common among the Carriers. Nay more, even the "false hair," or wigs were in vogue here as late as thirty years ago. These will be found described in our Chapter on Dress and Personal Adornment.

with a double object in view: that of helping in holding the instrument and of tightening or loosening the bottom strings at will and thus regulating the sound of the drum.

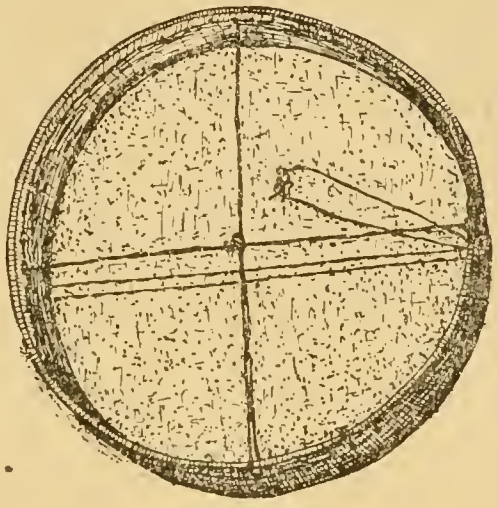

Fig. 140.

That portion of the Carrier—and possibly the whole of the Tsi[Koh'tin —tribes which is adjacent to the Bilqula Indians formerly used square drums. But this circumstance should be regarded merely as a further evidence of the Western Dénés' innate power of imitation. The drums are called *thəñrəle* in Carrier.

Any stick at hand, padded or otherwise, served to beat the drum.

It seems almost incredible that in a country, where for at least five full months every year snow covers the ground, snow-shoes should have been practically unknown until a comparatively recent date. Yet, if we are to credit the natives, this was formerly the case with the Carriers, the most populous, and, actually, the most progressive of the four Western Déné tribes. The Tsé'kéhne used snow-shoes from time immemorial; but we are told that not more than 100 years ago, only the most prominent among the Carriers possessed that indispensable adjunct to winter travelling. Therefore with that tribe winter hunting was formerly well nigh impossible. The natives still relate how their ancestors painfully trudged on trunks of trees chopped down so as to form a continuous line or trail over the snow whenever necessity constrained them to wander any little distance from their winter quarters. I fully expect that their story will task the credulity of my readers, and I give it only for what it may be worth. I am simply repeating here what I have been told many a time.

Be this as it may, the Carriers are to-day as well provided with winter walking implements as they profess to have been originally destitute of

them. Apart from the snow walking stick, they now have no less than four very distinct varieties of snow-shoes *(·aih)* each of which is known under a different name. These are the *khé-la-pas*, the *ɔt'ɣu*, the *·aih-za* and the *sɔs-khé*.

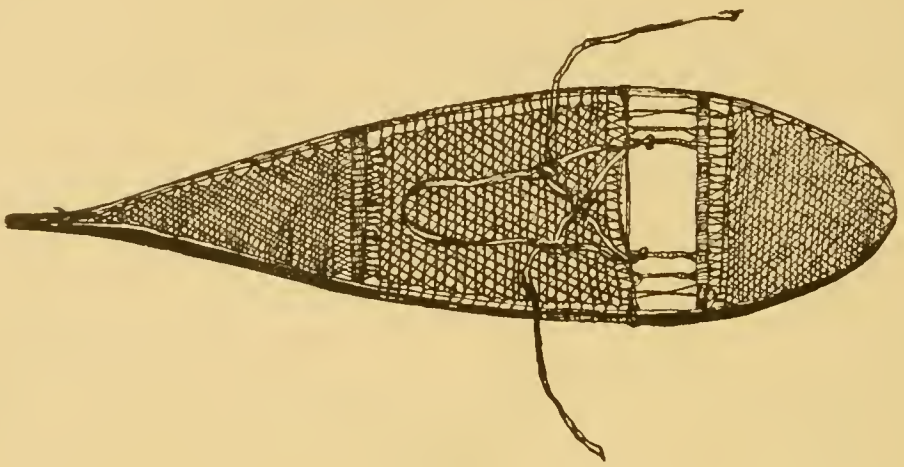

Fig. 141.

The *khé-la-pas** was the first model of snow-shoes known to our aborigines. It is still used in cases of urgency, when better or more fashionable snow-shoes cannot conveniently be made or, under all circumstances, by poor or unskilled people. Nevertheless this form is now obsolete, and is generally laughed at by the possessors of more elegant implements. The ground stick of this snow-shoe is of one piece from fore-end to tail, and the whole is left flat, as is the case, I think, with most of the snow-shoes in use in Eastern Canada. Fig. 141 represents a *khé-la-pas*.

The finer netting or filling of every Carrier snow-shoe is of delicate cariboo skin lines, and the coarse or middle one is of moose rawhide line. As these implements are said to be adventitious here, I will refrain from going into the details of the netting process which our Indians are not likely to have materially altered since the introduction among them of these winter commodities. Suffice it to say that a whole independent filling in is made out of a continuous string. The ground or side sticks are generally made of young saplings of black spruce or of Douglas pine *(P. murrayana)*; but those of mountain maple *(Acer glabrum)* or of mountain ash *(Pyrus Americana)* are more esteemed, though heavier. In all cases the cross-sticks are, as a rule, either of willow or of birch.

In fig. 142 we have the most recent type of Carrier snow-shoe. It will be seen at a glance that it is not inelegant. It is the *ɔt'ɣu* or "stitched together" by allusion to the peculiar form of its head. To

* "Mocassin (or *chaussure*)-end-rounded;" by allusion to its form.

facilitate walking, this is curved up and so retained by means of two or three lines twisted in one solid cord. To add to the gracefulness of the fore-end and prevent it from shrinking in, an additional bar is inserted some distance therefrom, and the resulting tension is also corrected by a transversal cord binding fast the extremities of the two sticks. The ground netting passes under both bar and cord. The name of this variety of snow-shoes indicates that the side sticks were originally united at both ends by means of stitches of skin lines; but to-day small nails or screws are more commonly used. Little tufts of coloured yarn issuing from each side of the frame are intended to add to the elegance of the implement. Such ornaments at the hind part of the snow-shoes distinguish the women's from the men's snow-shoes.

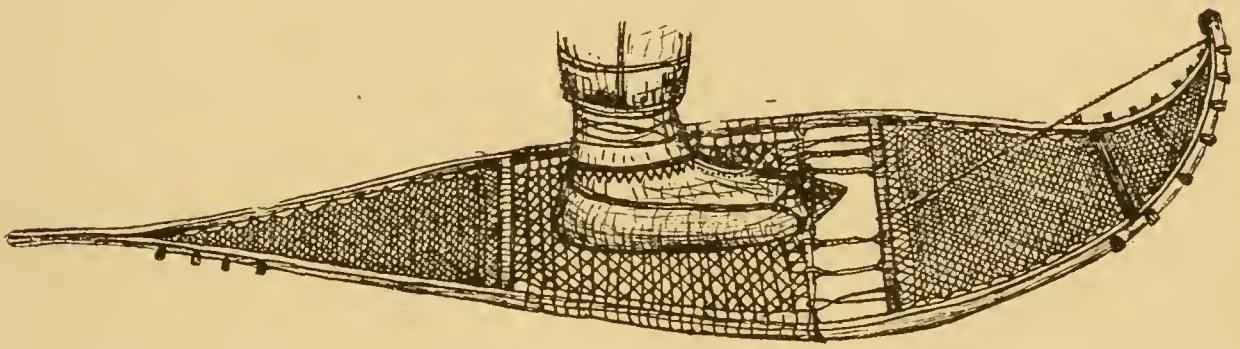

Fig. 142.

The artificial bending of the side sticks is obtained by two different methods. In the first case, such parts of the wood as are to be worked upon, are carefully wrapped with strips of willow bark and thoroughly heated by close application to the fire. They are next gradually pressed up with the hand or by forcing against the ground, when their ends are solidly tied so as to prevent the wood from returning to its original shape. However, this is more commonly steamed or rather "cooked" in boiling water, such parts of the sticks as cannot be introduced in the kettle or boiler being operated on by pouring thereon spoonfuls of hot water until they have become sufficiently pliable.

A third model of snow-shoes quite as common, if not more so, is the *·aih-za* ("snow-shoe only," or ordinary snow-shoe). In this, as in the preceding, two sticks are employed to form the frame, but instead of terminating in a sharp front end, their fore-ends are thinned and joined together with a strong lashing of rawhide lines thereby forming a rounded instead of an angular head. In other words, this snow-shoe is a long khé-la-pas made out of two side sticks and curved up in front as the ɬət'ɬu. Therefore the additional cross-stick and string noticed in the latter are wanting in this unpretentious style of snow-shoe.

The Tsé'kéhne snow-shoes are remarkable for the number of their cross-sticks. They generally have six of them, three in front, and three back of the middle or coarse netting. They thus gain in solidity what they lose in lightness.*

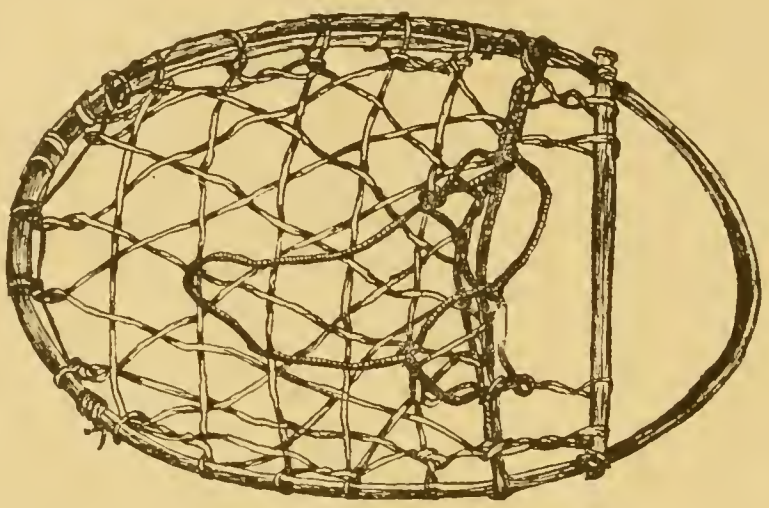

Fig. 143.

The last variety of Carrier snow-shoes is herewith figured. Its form will no doubt explain its native name, *sɔ̄s-khé*, "black bear foot." It is proper to little children before they are sufficiently grown up to use the common snow-shoes. Not unfrequently, women, especially those who are poorly circumstanced or unprepared for a heavy fall of snow, will be seen wearing similar, though of course much larger, snow-shoes. Naturally the frame of such primitive implements is composed of only one stick whose ends are rudely lashed together. Instead of having the cross-stick notched in as in the above figure, it is more generally forced in a shallow hole mortised at either side of the frame.

Fig. 144.

As these implements are essentially temporary, they are often of a rude description. Such is not the case with the *ɲɔt'ɲu* and the *'aih-za*. Not only are the wooden parts of these carefully shaved and scraped over, but they are generally daubed with red ochre, and in not a few cases covered with a coat of red or blue paint.

* The reason of this is their great length which is intended to deaden the creaking of the frozen snow caused by the short snow-shoe, and thereby not to betray the approach of the hunter.

Here we have the winter walking-stick * already alluded to. It renders to the hand of the traveller over snow fields the same service as the snow-shoe does his feet, since its circular appendage (fig. 144)

Fig. 145.

prevents the stick from sinking too much in deep snow. It has moreover another very valuable advantage which I have tried to illustrate through fig. 145. The hand of the hunter, warm and trembling from the excitement of the chase, if passed through the leather loop which often

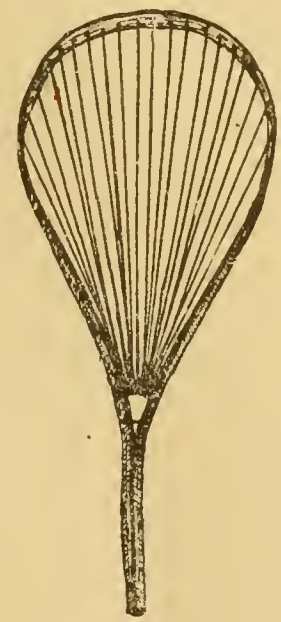

Fig. 146.

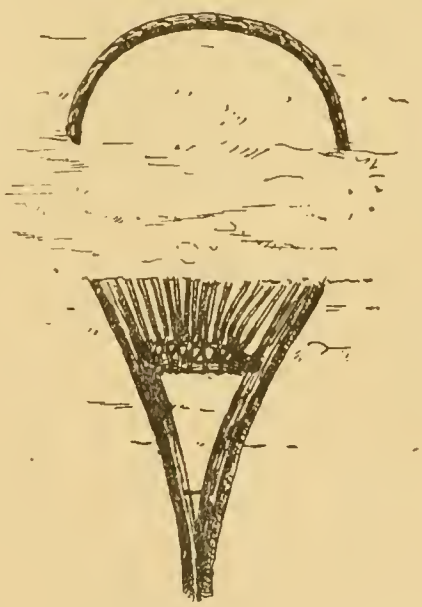

Fig. 147.

accompanies the upper part of the staff, can thereby be steadied and find a reliable support for the barrel of his gun while in the act of

* *Thəz-mas*, "walking-stick rounded" by allusion to the circular appendage.

firing. Despite these undoubted advantages, this walking-stick tends to become obsolete in several localities.

But one implement now remains on our list of undescribed wood-and-skin items. This is the ice-scoop or *ɲupas* of which an idea may be gathered from fig. 146. It is brought into requisition to scoop out of the hole one is making in the ice the broken pieces driven in with the *ətέ* or ice-breaker. The frame is usually of mountain maple. Fig. 147 will explain the connection between the strings and the frame.

TEXTILE AND TWINED FABRICS.

We now come to the twined and textile fabrics of the Western Dénés. The latter are very few ; indeed the weaving industry might almost be described as null among those tribes, since the rabbit skin blankets were originally the only genuine textile fabric manufactured among either the Carriers, the Tsé'kéhne or the TsiɬKoh'tin.

The weaving of these could hardly be more primitive. The first step is of course to spin, or rather to twist on the naked thigh, the strips of the rabbit skins. These are previously steeped in water to facilitate the cutting and spinning operations. Each skin is made to yield one single band, and each band is knotted end to end so as to form a continuous cord.

A frame or loom is first erected with poles of the proper dimensions and secured either by planting the two side pieces in the ground, or, more commonly, by leaning them against each wall of any corner in the house. Over the two cloth-beams, the skin cord is wound so as to form the warp. As for the woof, a separate strip is knotted in its middle part to the last left hand thread of the warp in such a way that two threads result which are then twisted together, then entwined with the next warp thread, again twisted together, again entwined with the next perpendicular thread, and so on until the last thread of the warp is reached, when the operation is resumed from the right to the left. Each successive woof thread is added immediately under the preceding one so that the weaving, if weaving there be, is always in a downward direction. Whenever the web becomes too low for the convenience of the weaver, web and warp are made to revolve on the loom beams up to the suitable height. The web is then momentarily steadied by means of a string attached on either side to the perpendicular poles of the loom. No batten or any similar device is used. Fig. 148 will give some idea of the whole process. The cut *a* represents a cross-section of the web.

a

The Tsi|Koh'tin and Carrier women now weave fairly good belts or girths out of the yarn they get at their trading posts. But this is a new industry among them and we need not tarry in its description. Suffice it to say that they use wooden healds as those of the Zuni Indians. Indeed, I think that the whole method of girth weaving is practically identical with these two heterogeneous stocks.

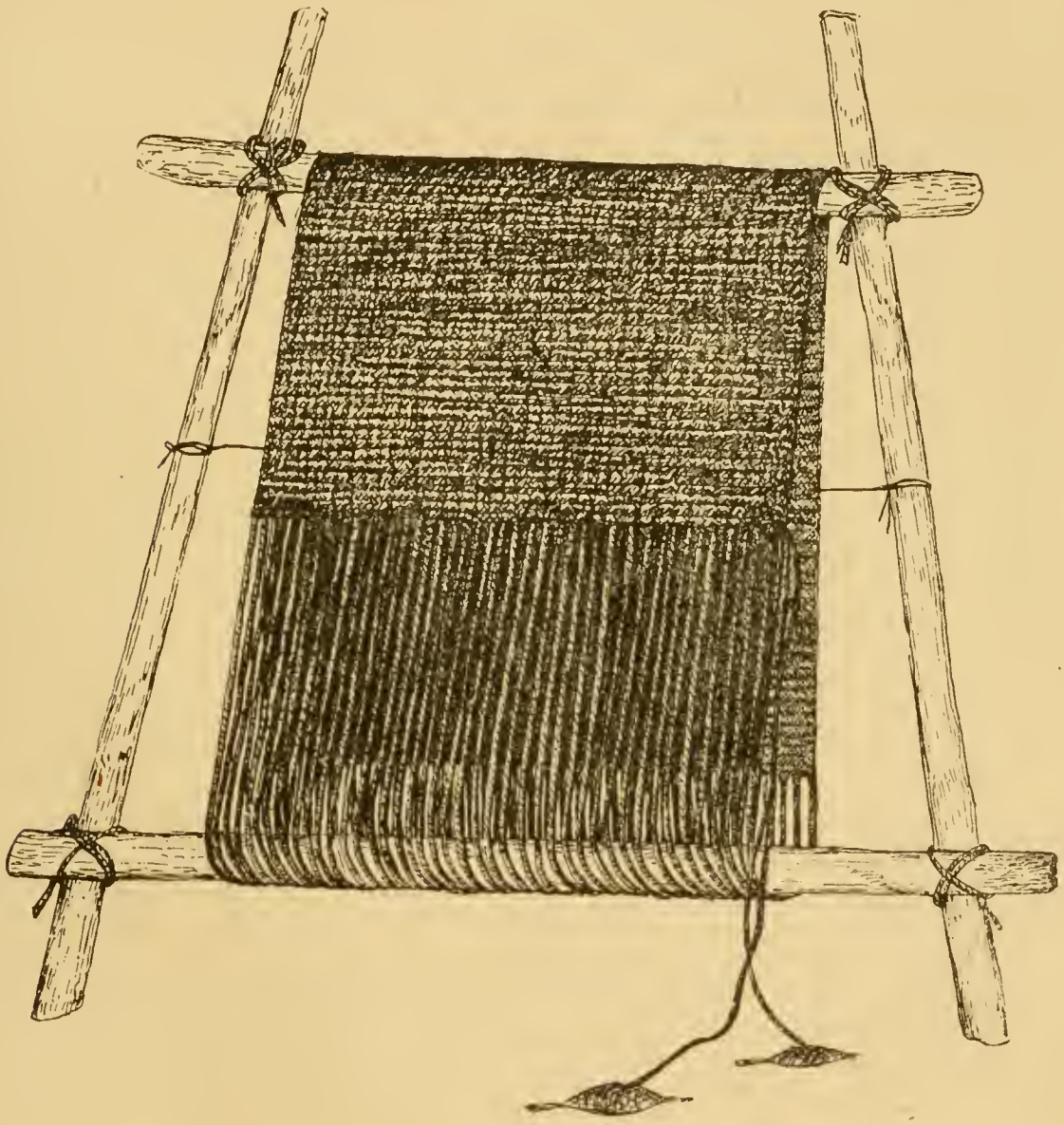

Fig. 148.

The Tsi|Koh'tin women also weave or plait mats commonly used to spread on the floor or ground instead of a table cloth, the *menu* of the family repast round which each person squats while partaking thereof. The material is a sort of rush or juncaceous plant, the exact species of which I could not determine. Matting is an unknown industry among the Carriers and the Tsé'kéhne.

With regard to the mode of netting, the drag-nets of the Western Dénés are of two kinds: one is intended for service against any species of fish, with the exception of the sturgeon, and the other is of use to capture the latter fish exclusively. Fig. 149 will explain the manner of

Fig. 149.

Fig. 150.

knotting the sturgeon net, while all the other kinds of netting, whether drag, scoop, or dip-nets, or even, the packing bags which shall soon be described, are knotted, as shown in fig. 150.

No mesh-stick is used while the Carrier is working at the smaller varieties of nets. It is replaced by the middle finger of the left hand. In this case, the netting-needle also consists merely in a narrow piece of board scalloped at either end to receive the twine which is wound around. But when at work upon large-meshed nets, our aborigines have recourse to the picture frame-like wooden implement herewith figured. This is

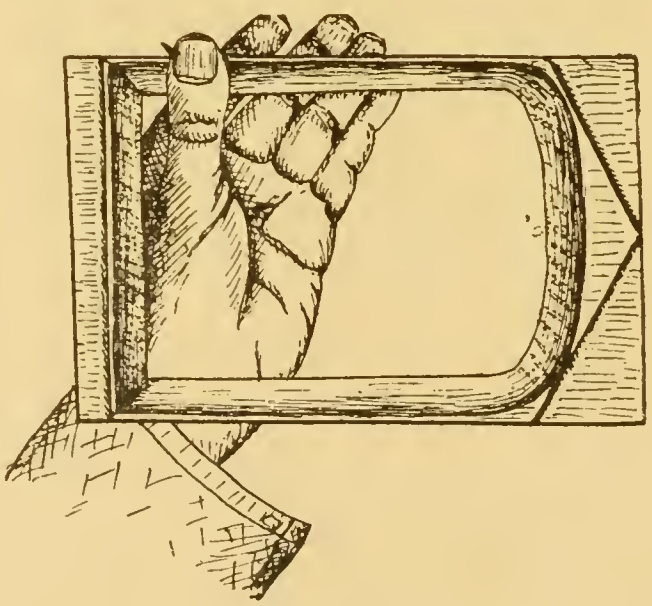

Fig. 151. ⅓ size.

carved out of one piece and serves as a mesh-stick. It has replaced the original wooden horse-shoe made of a bent twig. In this case a regular netting shuttle is also resorted to. As this is in every particular identical with that common among white fishermen, it is but natural to infer that it is here a borrowed article.

The meshes of the sturgeon net are about ten inches square, while those of the beaver nets are based on the distance between the tip of the thumb and that of the index finger when both are outstretched. The width of any kind of fish-net of the larger variety corresponds with that of seventeen meshes of the same net. The nets intended for smaller fish have their meshes from ¾ of an inch to one inch and a half square. About twenty of the former dimensions form the width of the net. All kinds of drag-nets measure at least one hundred feet in length.

Among the Tsé'kéhne both hands outstretched with the thumbs tip to tip are the standard measure for the width of the beaver net. Large nets require twelve such units, while the smaller ones have only nine, or thereabouts. Such nets never exceed twenty-five feet in length.

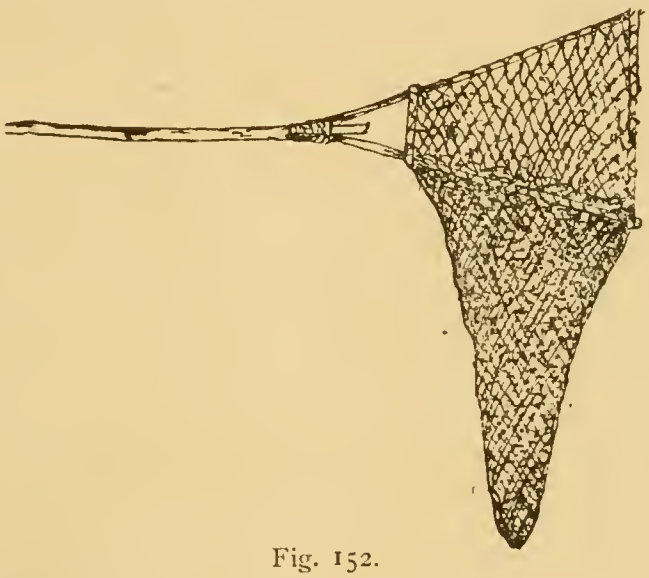

Fig. 152.

Identical in netting are the two kinds of dip-nets * in use among the Carriers. The first (fig. 152) serves either to catch salmon or to scoop out the smaller fish which periodically swarm up certain shallow streams. When doing service against salmon, it is dipped in the water and then left until a capture is effected. But if used to catch small fish, it is managed as a ladle. Its make will be easily understood by a glance at the above figure. It is from five to six feet deep.

Fig. 153 represents a smaller variety of the dip-net. It serves in a few places only, and, as a rule, its period of usefulness does not exceed four or five days in one year. During the first warm days of each recurring spring, immense numbers of the *thé'mək*, the very small fish which we have already mentioned in another chapter, ascend to the surface of the water in a few lakes and become an easy prey to the Indian women who, armed with this net, scoop out canoe loads of it in

* *Pe'-thəʁaih*, "wherewith one scoops," a verbal noun.

one single day. Less than a week thereafter, not a fish will be seen of the myriads that were basking in the sun. Of course, the meshes

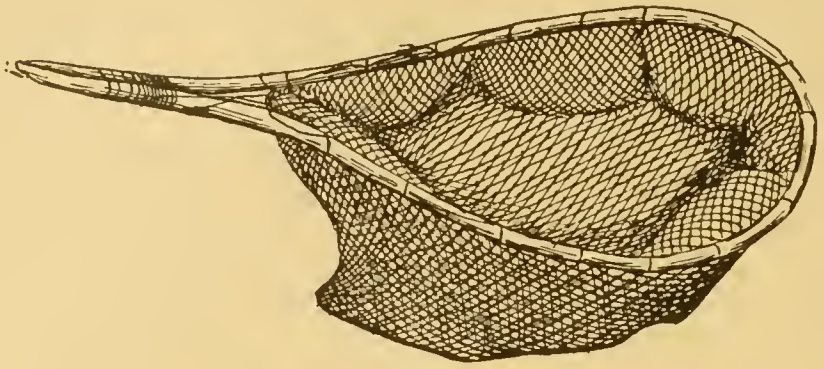

Fig. 153.

of the dip-net resorted to as a means of securing them are proportionally small. They are scarcely a quarter of an inch square.

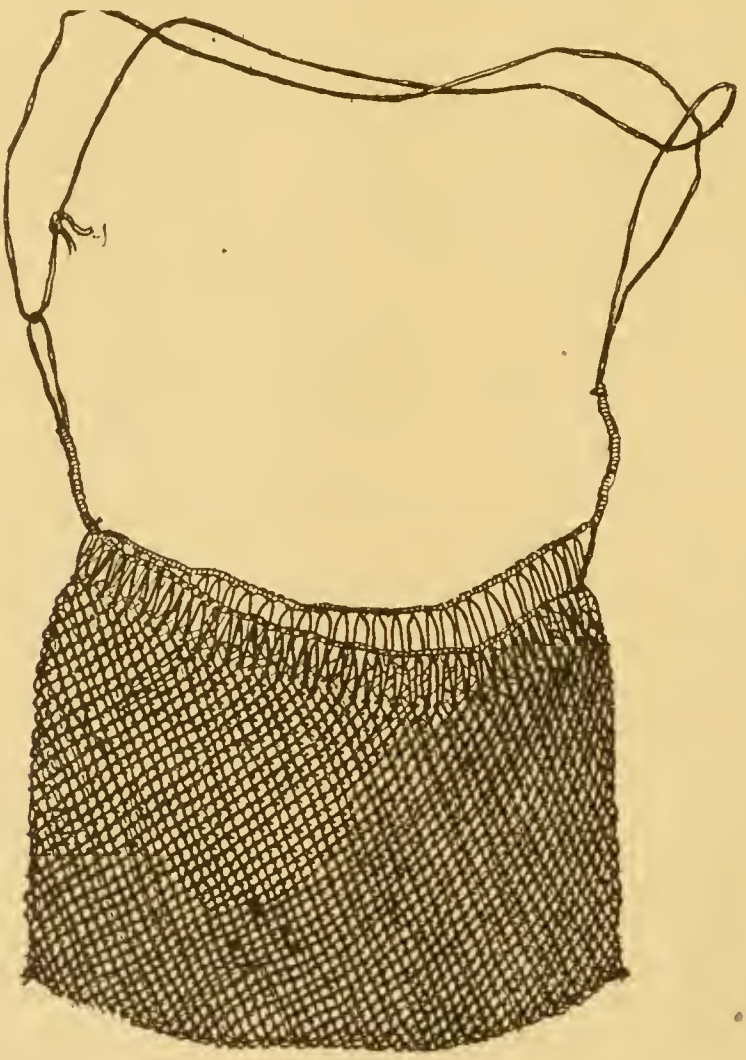

Fig. 154.

The nets of our aborigines were originally of the fibre of either the nettle (*Urtica Lyallii*), the willow (*Salix longifolia*) bark, or a species of

wild hemp called *hwonəɟ a* in Carrier. The plants were carefully dried in the house, crushed with the hands, and their fibres extracted by pulling up with the right from the left hand, pressing the stalks down on the ground. The shreds were then spun by twisting on the thigh. Naturally this was the work of the women. Nowadays fine Holland twine is used instead.

Though the skin of the beaver is occasionally used to make beaver-nets —as is the case when the animal is found so decomposed that its fur has lost its value—yet such nets are generally of cariboo skin cut in fine strips called "babiche" in the parlance of such Indians as parade an acquaintance with the dialect of the H. B. Co's. employees.

Such is also the material of the *t'ɟuɟ-ən'kez'*,* or packing bag of fig. 154. This is to the men what the moose skin wallet (fig. 135) is to the women. It serves to carry to short distances light burdens such as a lunch, peltries to the trading post, provisions for an unimportant journey, etc. It is also very commonly used as a game-bag. The above figure represents the t'ɟuɟ-ən'kez' such as is still made among the Tsé'kéhne, and as it was originally among the Carriers. But of late years the latter, having learned from their missionaries to have a greater regard for the physical weakness of the gentler sex and to do themselves at least a part of the packing, use it for heavier burdens than those for which it was originally intended. This has rendered the rounded cord through which it is carried uncomfortable. It is now replaced by a regular leather thong, which also runs round the rim of the bag.

* T'*ɟuɟ* means "rope," and the desinence of the compound word *'kez*, which implies "direction, tendency" towards a place, is common to all packing devices.

CHAPTER X.

DRESS AND PERSONAL ADORNMENT.

COMMON DRESS.

It would be difficult at the present time to reconstruct in all its details the national dress of the prehistoric Western Dénés, if indeed there ever existed any national or uniform costume for each and all of the different tribes and sub-tribes under study. Sir A. Mackenzie, in his account of the voyage of discovery he made in 1793 through part of their territory, might perhaps enlighten on this subject the reader who can have access to his narrative.* Not enjoying this advantage, I must content myself with what I have learnt from daily intercourse with the most reliable among the older Carriers.

Speaking of the dress of the Eastern Dénés, the Rev. E. Petitot has the following to say :—

"Outre la blouse de peau blanche à queues décorées de franges et de breloques metalliques, qui fut le costume primitif des Déné-Dindjié et que portent encore les Loucheux, ceux-ci, ainsi que les Peaux-de-Liévre y joignent un pantalon de même matière et aussi richement orné, qui est cousu avec la chaussure. Il est porté par les femmes comme par les hommes. Les tribus plus méridionales remplacent le pantalon par les cuissards ou mitasses que des jarretières retiennent aux jambes, et par un pagne oblong d'une étoffe quelconque.

"La robe des femmes est trés courte et orneé d'une profusion de franges, de houppes de laine, de verroteriès et de breloques sonores. La chaussure générale est le mocassin, ou soulier de peau molle qui emprisonne et dessine le pied comme un gant le faif de la main. Durant l'hiver le renne, le castor et le liévre arctique sont mis à contribution pour fournir à l'habitant du désert des vêtements aussi chauds que légers et commodes.†

That the dress of the Western Dénés considerably differed from that of their Eastern congeners such as above described is beyond the possibility of a doubt. And no wonder. Being of an imitative turn of

* Voyages from Montreal, on the river St. Lawrence, through the continent of North America, to the Frozen and Pacific oceans ; in the years 1789 and 1793, etc., London, 1801.

† Monographie des Déné-Dindjié, p. xxiv ; Paris, 1876.

mind, and living, most of them, in close proximity and with frequent intercourse with the Coast Indians on the one hand and the Shushwap on the other, they could not fail to accommodate themselves to their environments. It may be taken for certain that their wearing apparel was, as a whole, rather meagre and scanty. This remark does not apply to the ceremonial costume of the Carriers, which, as will soon be seen, was quite elaborate and complicated.

The summer dress of the men consisted mainly, if not entirely, of a tunic, the breech piece, the leggings and the mocassins. The tunic was a loose vestment which the Indians now compare to a shirt. Its material was tanned cariboo skin, and it descended to the thigh or thereabouts. It had no tail-like appendage as that of the Eastern Dénés. This tunic was uniform neither in cut, nor in material, as poor people made it of almost any available skin with the fur on, and gave it the form best suited to their means. Well-to-do Carriers decorated this garment with a multitude of fringes to conceal the seams. The strands of these were sometimes further embellished by means of porcupine quills dyed yellow or green.

The breech-piece and the leggings were also of the same material, cariboo skin. The latter covered the legs in their whole length, and were kept in position by a string tied to the leather belt on each opposite side. They were furthermore secured below the knee by means of ornamented garters (see fig. 145). These breech cloth and leggings without trousers were still worn here by a few men not more than twelve years ago. Leggings of identical style are still in common use among the men, but during the winter months only, and they are now worn over the pants.

The national foot gear is, and has always been, the mocassin. This was originally of the dressed skin of the elk *(Cervus Canadensis)*. But the poorer classes frequently made it of untanned marmot skin, or even of the skin of the salmon. The mocassins are now uniformly of dressed cariboo or moose skin among the Carriers and Tsé'kéhne and of deer skin among the TsilKoh'tin. An idea of their present form may be gathered from fig. 142.

Owing to the nature of the material of these mocassins, our aborigines generally went barefooted in rainy weather, and to-day the women and the children at least still adhere to this custom. It must be added that, progressive as the Carriers are, there is not among them a single man who would undertake a journey of any importance, nay even a short trip, without the traditional mocassins. Even the most advanced young men profess to be unable to walk any considerable distance with our common leather shoes.

All the Western Dénés wear mittens, which are made of the same material as their mocassins. Even during the fair season, they will never do any kind of manual work without having them on. They are suspended to a cord of plaited yarn passing behind the neck and over the shoulders, so that, even when they are not in actual use, there is very little risk of losing them. The wrist-band is invariably ornamented with stripes of blue and red cloth, together with colored ribbons, according to the fancy of the wearer.

Gloves are now used, but were unknown in prehistoric times.

Instead of the hood common among their kinsmen of the Mackenzie Basin, the Carriers formerly wore a dainty cap of marmot skin made in this wise:—A band, some three inches broad, was cut from the skin with the hair on and secured at either end so as to form a crown-like head-dress. Over this was sewed a circular piece of similar material leaving out a brim of the same width as that of the band. This projecting part of the skin was then slit into a fringe which rested gracefully on the original head-band.

This description applies to the summer cap. The winter head-gear consisted of a hemispherical bowl of woven rabbit skin strips without fringes. Both summer and winter, men and women wore the same style of cap.

The summer dress of the women did not materially differ from that of the men. The tunic was simply longer and oftentimes ornamented round the shoulders and back with a row of pendent cariboo and beaver claws or teeth. For the sake of convenience a girdle also secured the folds of that robe over the waist. They wore, and among the Carriers continue to wear, leggings like the men.

During the cold season both sexes, but more especially the women on account of the outdoor work to which they were subjected, added to the foregoing a sort of small blanket of undressed skin of any small fur-bearing animal which covered their breast from the neck to the waist. This pectoral blanket was attached with strings behind the neck and also secured by the outer girdle round the waist. We have already seen that in olden times a swan's skin sometimes served an identical purpose.

The body was further protected against the inclemency of the season by means of a large cloak of lynx skins sewed together and worn with the hair outside. The more conservative half of the Tsi|Koh'tin tribe have retained to this day the use of this fur cloak. But it is worn among them with the hair next to the body, and the material is, as with the poorer Carriers, marmot instead of lynx skins. The Tsi|Koh'tin women

transform it into a sort of gown by tying it round the waist with a girdle of leather, from which hang beaver nails or teeth, old thimbles or shells of exploded brass cartridges which produce during their walk a jingling sound much appreciated by the native ear.

Winter and summer, the members of the three tribes under consideration wrap their feet with square pieces of blanket, *khé-thəl** which are to them the counterpart of our stockings.

With the advent of the whites the dress of the Western Dénés gradually changed, until it became, what it is now, practically that of the H. B. Co.'s people, with the few additions necessitated by the nature of the former's avocation. However, skin coats identical with that illustrated through fig. 145 are still occasionally met with, especially among the Tsé'kéhne and Babine tribes.

The foregoing remarks, as I believe, will give a fair idea of the aboriginal costume such as it obtained among the Western Dénés, without reference to rank or age. But, when treating of the natives' wearing apparel, one should not forget that even their psychological ideas are not without influence on its nature. We should remember that most dreaded creature, the pubescent girl. She was considered among the Carriers so much of an *être à part*, that she must constantly wear some badge to remind people of her terrible infirmity, and thereby guard them against the baleful influences which she was believed to possess. This consisted in "a sort of head-dress combining in itself the purposes of a veil, a bonnet and a mantlet. It was made of tanned skin, its forepart was shaped like a long fringe, completely hiding from view the face and breasts; then it formed on the head a close fitting cap or bonnet, and finally fell in a broad band almost to the heels. This head-dress was made and publicly placed on her head by a paternal aunt, who received at once some present from the girl's father. When, three or four years later, the period sequestration ceased, only this same aunt had the right to take off her niece's ceremonial head-dress."†

The latter sentence applies to the daughter of untitled parents. In case the maiden was of noble birth, the first anniversary of her entering

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* "Foot-platform." The native names of the different parts of the wearing apparel are herewith given, as they may afford a clue, when considered from an etymological standpoint, to the relative degree of importance or antiquity of the articles thereby denominated. Head-gear of any description, *t'səR*; coat or tunic, *tzût*; breech-piece, *tsan*; girdle, *sé*; cloak (and blanket), *tsət*; leggings, *khé-tsih* (wherein-the-foot-is-passed); mocassin, *khé-skwət*, or in composition *khe* (synonymous with "foot"); pectoral blanket, *pətsichuz* (that—being a soft stuff—which covers), a verbal noun.

† The Western Dénés; Proc. Can. Inst., 1888-89, p. 162.

upon her maturity witnessed the imposition, with befitting ceremonies and the usual banquet, of a sort of diadem such as herewith figured.

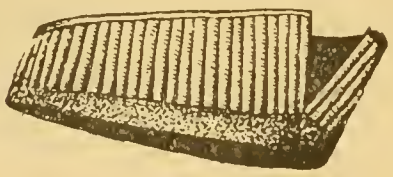

Fig. 155.

The ground part of this was a band of tanned skin which was fringed from about one inch and a half above the bottom up to the top. Each strand of that fringe was passed through a dentalium shell and then sewed up at the top to an encircling strip of skin. As this crown was lower on the back than in front, shells of different lengths were chosen according to the place they were to occupy, A lining of skin, with or without the fur on, was then added, and the lower corners of the ends stitched together, as shown in the cut. Upon crowning the maiden with this shell diadem, the paternal aunt became heir to the discarded bonnet with fringe and mantlet.

Both diadem and bonnet were articles of every day wear, and genuine ceremonial head-dresses.

Not only pubescent girls, but even such boys as were reaching the same stage of life had their fingers, wrists and legs encircled with rings or bracelets made of sinew entwined with down. Neglecting these precautions would have exposed the careless party to premature infirmities and incapacitated the young man for the fatiguing exercise of the chase.

The Western Dénés of the old stock, and especially the Carriers and the Babines, were not wanting in articles of personal adornment. Among head ornaments, they had the ear-pendants, the nose ring or crescent, the *ni-*Kə*-dîn'a*, the hair pendant and, among the Babines, the labret.

Two very distinct varieties of ear-pendants* obtained among the Carriers. The first consisted in a bunch of four buckskin strings passed through pairs of dentalium shells and hanging from the ear, as shown in fig. 156. As soon as glass beads became known, some were inserted between each of the two shells suspended from each hole in the ear. A small beaver claw furthermore prevented the pendent shells and bead from slipping off. Several Indians still bear the marks of this now antiquated pendant.

A different kind, which was still in honour but a few years ago, but is now likewise obsolete, is the haliotis pendant (fig. 157). The specimen from which I have drawn fig. 157 was in actual use when obtained for my collection. Pendants of this material probably affected various forms. Yet I fear that no other specimen could now be found among our

* *Tzokwəl.* 2nd. cat.

aborigines. Considering that fine shreds of sinew were formerly, as they are to-day, common in every native household, it would appear, judging by the coarse line of buck skin appended to this "jewel" that very little regard was entertained in olden times for the sensibility of the human ear.

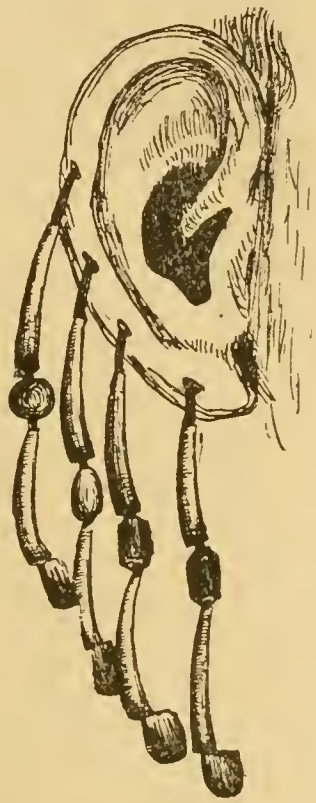

Fig. 156.

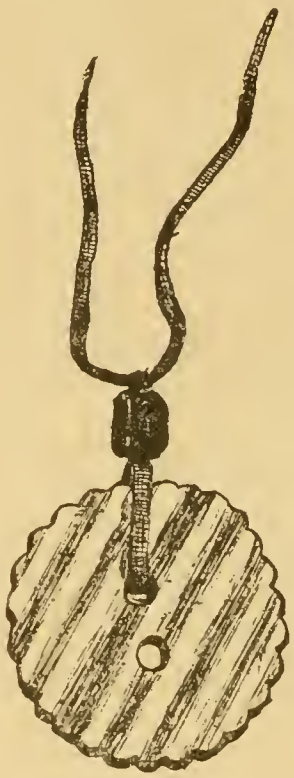

Fig. 157.

The dentalium pendant was proper to men, while the latter or haliotis ornament belonged to the fair sex. With insignificant exceptions, neither the men nor the women now wear any ear pendant or ring, except among the Babines, whose *taneza* or noblemen have adopted the silver ear-ring,* proper to persons of similar rank among their alien neighbours, the Kitiksons.

As among the majority of savage or barbarous peoples, in contra-distinction with civilized nations, the Western Dénés were formerly fond of perforating their septum to introduce therein what they considered wondrous ornaments. These might be divided into three different categories: the crescent, the discoidal or cruciform pendant and the silver ring.†

The two first ornaments are figured above, and were of haliotis shell. The crescent was, of course, inserted to the middle through the hole of

* See Niblack's The Indians of the Northwest Coast, plate vi. fig. 13.

† All the nose-pendants are called *ni-spas*, *ni*, a contraction of *nih*, "nostrils;" *spas*, the root of *nanispas*, "ring-like"

the septum, the cusps hanging down. Others were contracted enough to permit of being worn ring fashion with the cusps grasping the septum as those of the ancient Peruvians.* I have seen Babine women wearing through the septum a silver crescent of identical size with that figured above.

Fig. 158.

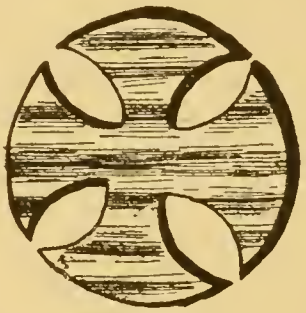

Fig. 159.

The circular nose-pendant (fig. 159) was placed in position by pressing the fore part of the septum through the cusps formed by the deep indentations carved out in the shell until the septum hole was reached. The proximity of the points or cusps then prevented its falling off.

As for the third variety of nose ornaments, it consisted in a silver ring which was more than once of ridiculously generous proportions. Indeed, if I am to credit my informants, this was, among the Babines, of such a size that one could easily eat through it. I have never seen any.

All the above nose ornaments were used indifferently by men or by women. A fourth, which it was the privilege of the women of rank to wear was the *ni-kɔ-dîn'a*, or "passed through the septum." Fig. 160 will

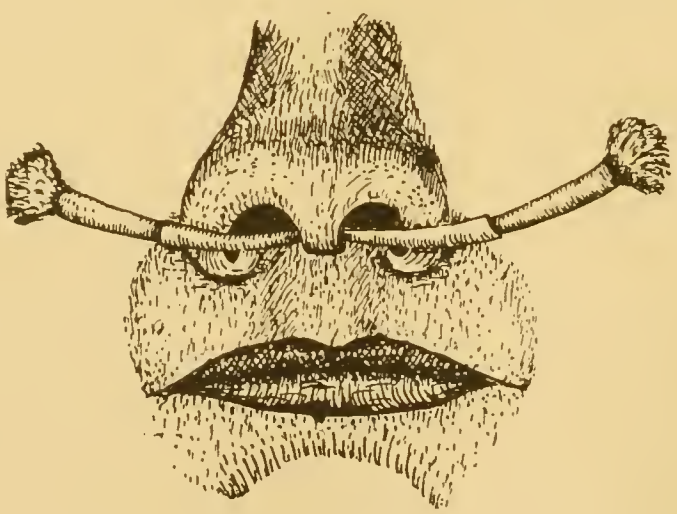

Fig. 160.

explain its form, without doing justice to the material of which it was composed. Two pairs of dentalium shells, the small end of the one

* See "A Study of the Textile Art," by W. H. Holmes, vi. Ann. Rep. Bur. Ethnol., Washington, 1888, p. 237, fig. 343.

inserted in the large end of the other, were kept springing out, as it were, from the septum by means of a sinew thread running from end to end of the shells and through the perforated nasal partition. The extremities of the "ornament" were adorned by a small tuft of the red down of the head of the wood-pecker *(Ceophleus pileatus)*. This ornament was rarely exhibited outside of ceremonial gatherings.

It can already be inferred from the foregoing that the Western Dénés prized as much the dentalium *(D. Indianorum)* shells as their kinsmen who now inhabit the Hupa valley, in California. That the esteem of the former for the red scalp of the wood-pecker is not confined to them may be gathered from a perusal of Prof. O. T. Mason's "The Ray Collection from Hupa Reservation."*

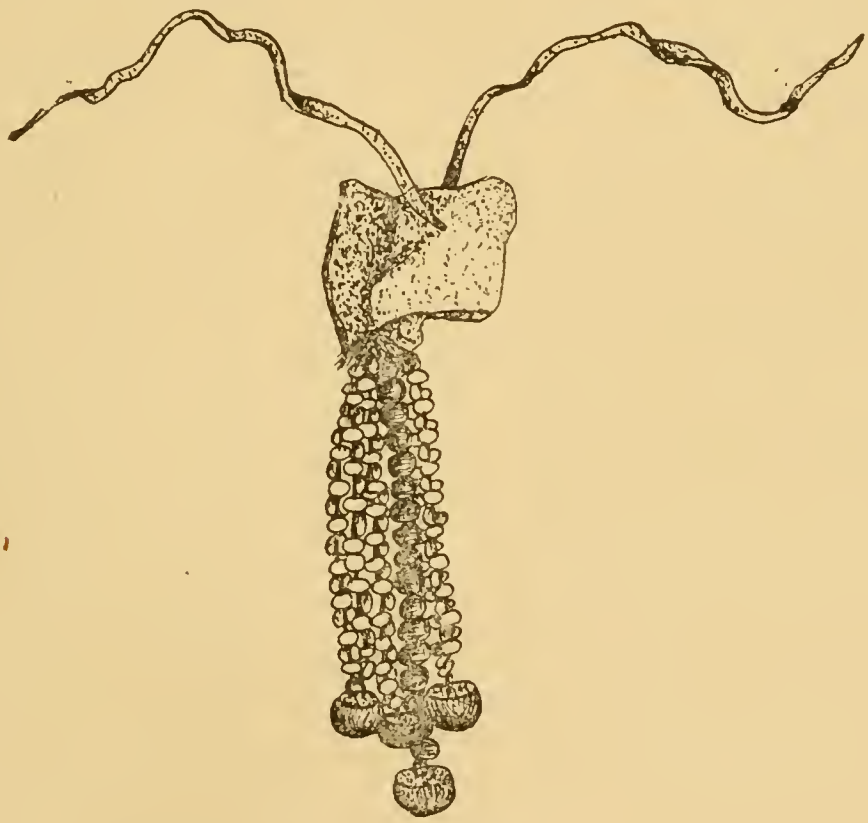

Fig. 161.

Lastly, with a view to enhance their natural attractiveness by means of extrinsical ornaments, the young men and young women attached on either side of their hair, a little above the ears, bunches of strings decorated with dyed porcupine quills and beaver claws† or, more recently, holding glass beads of various colours sometimes ending in copper buttons, as is the case with fig. 161. Until a few years ago, these

* P. 231.

† *Nîmpa-stla*, "they lie on the face-edge," a verbal noun.

were to be seen occasionally in a few remote places. As all other articles of native adornment, they have now completely disappeared.

In the course of his paper "On the Masks, Labrets," etc., W. H. Dall gives the following definition of the labret. "The labret, among American aborigines, is well known to be a plug, stud, or variously-shaped button, made from various materials, which is inserted at or about the age of puberty through a hole or holes pierced in the thinner portions of the face about the mouth. Usually after the first operation has been performed, and the original slender pin inserted, the latter is replaced from time to time by a larger one, and the perforation thus mechanically stretched, and in course of time permanently enlarged."* As regards the nature, mode and time of insertion, these words are in every way applicable to the labrets† of the Babine sub-tribe. When these had reached the maximum size which they were to retain for life, they were a flat button, oval in circumference, at least one and a quarter inch long by three-quarters inch wide, of a hard wood, commonly mountain maple *(Acer glabrum)*. The insertion of the tentative bone pin was the occasion of special rejoicing and feasting. The women only were entitled to this piece of ornamentation, and, as a rule, the higher the rank of the wearer the larger the labret was to be.

So much for the head ornaments. Other pieces of aboriginal jewelry of every-day wear were the *tsi-neɟthan*, the *tsi-nezdîlya* and, in later years, the *na-ɟthan* and the *la-tcən*. With the exception of the last, which is a compound noun of the third category, all these words are verbal nouns descriptive of the trinket thereby differentiated.

The two first mentioned were the Déné necklaces. The *tsineɟthan* was obtained by boiling and splitting off a thin band of a cariboo horn, which was given, while still pliable, the desired form. As an attempt at ornamentation, geometrical designs were scratched with the stone knife, over which a pinch of diluted red ochre was rubbed with the hand. The colouring matter passed over the smooth surface of the horn, but remained in the light furrowings which were thus brought into greater prominence. This primitive method is still common among the Western Dénés. Charcoal, instead of vermilion, is sometimes used.

The *tsinezdîlya*,‡ was a necklace of dentalium shells which was liable to affect different forms, as the shells were threaded in such a way as to fall over the neck or to encircle it lengthwise. A similar necklace,

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* Third Ann. Rep. Bureau of Ethnology, 1884, p. 76.

† "*Ni-ta-'kéz*, man (*i.e.* human)-lip-over."

‡ "That (a composite object) which is put around the head," *i.e.* the neck.

but larger and worn resting over the shoulders and breast, was a badge of the possession of shamanistic powers on the part of the wearer.

The *tsinejthan* was of so primitive material that its adoption as a means of personal adornment must have been rather early. Though the material of the tsinezdilya was an imported article, this necklace could, according to the following Carrier narrative, boast of an at least as great antiquity, unless we assign a recent origin to the actual plumage of the loon.*

"Once upon a time, there was an old man who was blind. He had a wife who used to help him in this way to keep alive: whenever she sighted game, she would hand him his arrow to moisten the stone point thereof with his saliva—for this old man was possessed of magic powers. Then pointing the arrow in the direction of the game, she would let him release it himself, which he usually did with good effect. One day, both came upon a very fat cariboo—"Moisten the arrow-head with your saliva," said the woman to her husband, which after he had done, he shot dead the animal. But his wife, who coveted the fat of the cariboo and was tired of living with a blind old man, pushed him aside, thereby throwing him to the ground, saying: "That old fellow,† what a bad shot he is!" —'But I think I have killed it,' insisted the old man. Yet as he was blind, he could not get the game, and while searching for it, he strayed a long distance from his wife who now abandoned him.

"As soon as the old man was out of sight, she set to cut up the animal, helping herself at the same time to large fried slices of its meat. What she did not eat on the spot she cut into thin pieces and hung out to dry.

"Meanwhile the old man was bewailing his fate. In the course of his aimless wanderings he had reached the shore of a lake, when a loon hearing his cries swam towards him as his kins are wont to do even now whenever they hear anybody talking in the forest.—"What ails you"? he said to the man.—'Poor wretch that I am, my wife has left me, and I am blind,' answered the latter.—'I will cure you,' said the loon; 'come over to me and hide your eyes in the down of the back of my neck. The old man did as he was bid, and both the loon and himself plunged in the water. When they reappeared on the surface, they found themselves at the opposite end of the lake.—'Now can you see'? quivered the loon. 'Look at yonder mountain,' he added. The old man complied with the request and answered: 'I see a little, as if through a mist. Repeat the

* This tale is also current among the Tsi[Koh'tin.

† *Tənethi-'qəl.* The desinence of this word is expressive of spite and scorn.

operation.' Again did the loon dive with him, emerging this time at the original point of departure. 'Now can you see'? asked the loon.—'I now see very well,' replied the old man wading ashore. Then to show his gratitude to his benefactor he presented him with his own dentalium shell necklace, and taking some more dentalium shells from his quiver, he threw them * at him.

"Ever since, the loon wears a white necklace, and the shells which hit him also produced the white spots we now see on his wings.†"

Now that we are satisfied as to the great antiquity of the dentalium necklace, we will leave the old man of the story to settle with his unfaithful spouse, and return to the description of the other articles of adornment obtaining among the Western Dénés.

The *na-ɣthan*‡ is the horn or metal wristlet which has already been described and figured (see fig. 126).

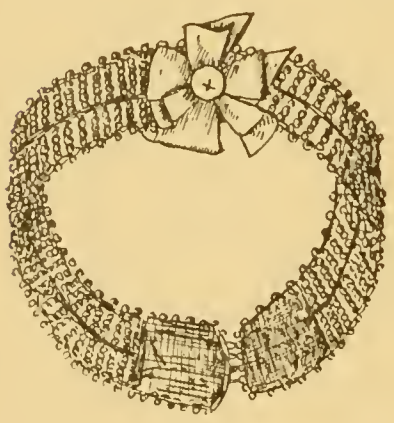

Fig. 162.

As for the *la-tcən*‖ it is of modern origin, and is an imitation of the ruffles of the whites. As such, it is worn in winter time as a protection against cold. But many Carrier or Tsé'kéhne girls nowadays wear a variety of it merely as an ornamental addition to their costume. To that class belongs the *la-tcən* herewith figured. It is of glass beads of several colours mounted on sinew threads. The rosette in front is made of narrow ribbons and a common mother-of-pearl button.

CEREMONIAL COSTUME.

It has already been hinted that the ceremonial costume of the Carriers, was very elaborate. When one keeps in mind their proximity to the coast Indians who are so fond of parade and display, this statement cannot surprise. What would rather astonish those who have read a former paper by the writer wherein the wonderful faculty of imitation characteristic of the Carriers is chiefly brought into relief is the fact that though the sociological peculiarities which gave rise to this costume were evidently borrowed, yet the latter was, in the main, original. It was proper to the *təneza·* and the *t'sèkhuza·* or noble men and women.

* "Threw them" and "presented them" are rendered by the same word in Déne.

† The loon of this story is the *Urinator pacificus* of the naturalists.

‡ "That (being of a naturally long material) which is around."

‖ Lit. "hands-stick," same word as that for "wrist."

Ceremonial banquetting, distribution of clothes or victuals, dances, incineration of the dead, etc., were the most common pretexts for its exhibition.

It will be noticed that the nature of its adorning material was rather monotonous and little varied. This consisted principally in the dentalium shells * interspersed with beaver claws and cariboo hoofs, pelts of small animals, the feathers and down of a few species of birds and porcupine quills.

The latter were invariably dyed, and here it may be explained that the Carriers, at least, knew but two varieties of dyes: yellow and green. The yellow colour was obtained by boiling the quills with a species of hair-like lichen apparently akin to the *Alectoria jubata*, but botanically different (*Evernia vulpina*). The green dye was no other than the decayed wood found almost everywhere in the forest. The colouring matter was likewise extracted by boiling. An analogous method is now followed, to dye in red or blue the plumes with which the young men are fond of ornamenting their hats and the horse hair which serves to embellish the instep piece of their mocassins: the original dye of the cloth or stuff procured at the trading posts is simply extracted and transferred by boiling.

The distinctive pieces of the noble man or woman's ceremonial attire were: the wig, the coronet or *'tast'ɿu*, the breast-plate or *yostəthəɿ*, and the *Raz*. With the exception of the third, of which I know but one specimen, none of them can now be seen outside of my collection. Each one was formerly so prized that it was the appanage of the full fledged təneza· only. All the other parts of the costume, such as the leggings and the mocassins, were of course proportionately rich and ornamented.

I possess two specimens of the ceremonial wig or *tsi-'kə-stzai* † and both differ in make and style of ornamentation. Fig. 163 represents what is perhaps the most elaborate in design. As no cut can do full justice to its details, I may be pardoned the following description. It is composed of three distinct parts: the horn-like appendage, the cap or head covering proper and the pendent train. The horns are made of the stout bristles of the sea-lion's whiskers, two lengths of which are used and united in front by means of buckskin and sinew threads. A rough network of the latter material fills up the space between the horn and the cap, and is arranged so as to determine the concavity of the latter.

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* *ʅpai* in Carrier, *tɿəpai* in TsilKoh'tin.

† Lit. "head-on (minute objects—*i.e.* the shells) are-lying."

Fig. 163.

The cap is formed of two rows of dentalium shells attached to a strip of cariboo skin otherwise secured to the above mentioned netting. A narrow band of leather separates the two rows and serves to retain in juxtaposition the shells whose threads are also passed through it at the proper intervals. The train is of human hair and measures three feet in length. Each strand is formed of about a dozen hairs twisted into a two-ply cord. About one foot from the bottom, bunches of perhaps fifty hairs in their natural condition are added to the end of each strand by means of finely shredded sinew. Moreover, on the outside of the upper part of the train, and forming continuation with the two rows of dentalia of the cap are bunches of four shells of the same description from the united small ends of which hang flaps of artificially curled human hair which add not a little to the general effect of the whole. Altogether, this wig must have produced a striking effect.

The second (fig. 164) is of less complicated design, but of perhaps more costly material. The front horn-like appendage is replaced by fine strips of ermine skin, and the head-covering part is likewise of dentalium shells, of which there are three rows. These are gathered in bunches of three, which are tied at the small end over heavy three-ply cords of human hair terminating on the outside in flaps of curled hair, as in the previous case. The train is composed of fine three-ply strands of human hair adorned, every three inches or so, with two dentalium shells in successive order. To retain these at the proper intervals, little pieces of wood are inserted between the shell and the strand, or the latter is wrapped over with sinew thread. This train is not so abundant in strands, nor quite so long as that of the preceding wig.

These wigs were used in festal dances during which they were decked with swan's down which, owing to the movements of the dancer, produced white undulating clouds intended to add to the picturesqueness of the scene.

They were held in such high estimation, that no consideration whatever could have induced their owner to part with them. The reason of this will be readily understood when it is known that they formed an integral part of the hereditary title of the nobleman. This is so true that they shared with him the traditional name which they were intended to honour. Thus wig, fig. 163, is called K*ahul* after its last possessor, who had himself inherited this name from a long line of ancestors. Therefore parting with them was equivalent to forfeiting one's rank and title. They were handed down from generation to generation, and this explains the air of antiquity and quasi dilapidated condition of those in my possession.

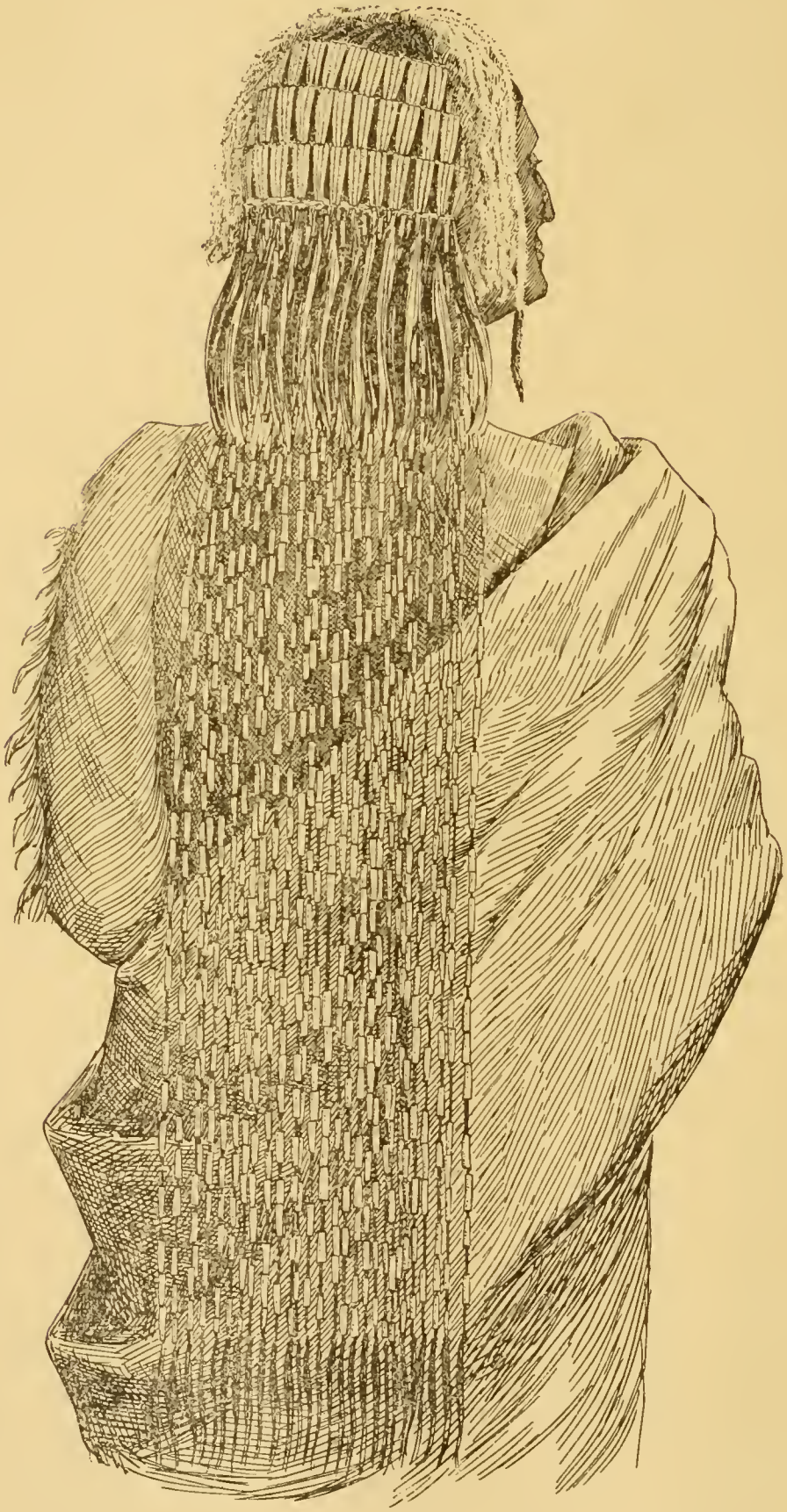

Fig. 164,

The staple material was the hair of notable women. It was clipped after death only, and arranged into the desired style on the occasion of the grand final banquet commemorative of their death and cremation. The hair of two women was required to make one wig.

Even women could aspire to the rank of noble or *t'sèkhèza'*, among the Carriers. On the occasion of ceremonial dances they wore a head-dress even more graceful and pretty in form, if not so imposing and weird in material. This was called *'tast'ɲu* or "woven-feathers." It was crown-shaped, and its principal component parts were stiff laps of fur skin, generally of the weasel, and feathers. The specimen herewith figured may be described as follows :—A strip of tanned skin about one inch in width and overlaid with three rows of dentalia serves as the foundation or head band of the crown. From this rise broad weasel skin strips with edges folded lengthwise and sewed up inside. These are stiffened by means of large feather quills or slender pieces of wood inserted therein. To further enhance the gracefulness of the head-dress, each skin is kept folded down at the top, thereby converting its tail into a flap. The skin laps are again retained in their upright position by a strip of dressed skin running, on the inside, around the upper periphery of the crown. Scalps of the red-headed woodpecker *(Ceophleus pileatus)* are secured on the folded part of each lap, while the tail feathers of another variety of woodpecker *(Sphyrapicus varius)* are sewn, pointing upwards, on the bottom and the middle of each upright piece of fur skin.

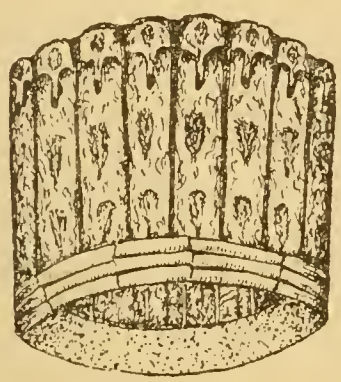

Fig. 165.

Fig. 166.

This head-dress was filled up, when in use, with down, which the wearer caused to escape around through the jerking of the head peculiar to the feminine style of dancing.

The above had been written and fig. 165 drawn for some time when I received specimen pages of a most important Bible Dictionary* now in course of publication in France under the supervision of that learned orientalist, the Abbé Vigouroux, wherein I found the sketch of a Chaldæan king

* *Dictionnaire de la Bible, etc., par F. Vigouroux*, Letouzey et Anè, Paris.

(fig. 166) wearing a headdress so much resembling the 'tast'ɲu that I could not resist the temptation of reproducing it here with the author's permission. This illustration being copied from a contemporaneous monument, offers a very suggestive base of comparison with the ceremonial paraphernalia of our aborigines. Though the crown therein represented must have been of some precious metal, it would seem that the feathers or *'ta* which have given its name to its American counterpart occupy an even more prominent place therein than in the Déné 'tast'ɲu.

The next important piece of the nobleman's ceremonial costume was the *yo-stəthəɲ** or dentalium breast-plate (fig. 167). It had the form of a

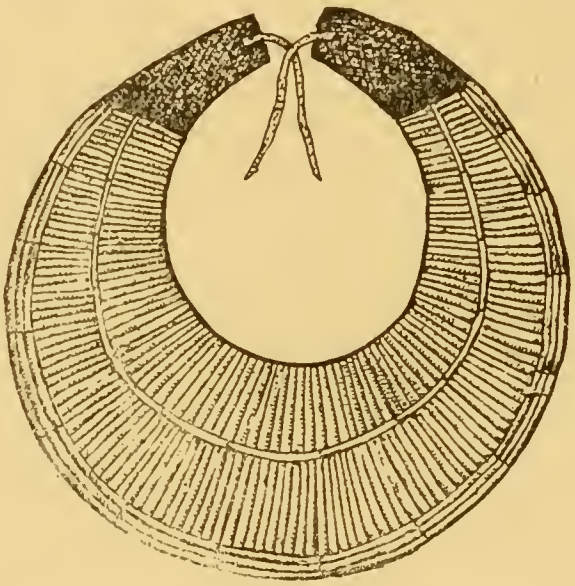

Fig. 167. $\frac{1}{5}$ size.

rounded crescent, and this particularity, no less than the costliness of the material, was no doubt intended to indicate the dignity of the wearer. The fitness of the dentalium as a means of ornamentation receives through this breast-plate its best illustration. These shells, as is well known, are larger at one end than at the other, and moreover are also slightly arched. The former peculiarity causes of itself the curve of the two broader rows of dentalia, while the latter likewise renders those of the middle and of the rim well adapted to the shape of the plate. The whole is of course mounted on a ground of dressed cariboo skin. Its two cusp-like extremities were clasped or knotted with rawhide strings behind the neck.

This article of personal adornment was valued at four dressed moose skins or forty beaver skins, which, if estimated at their present price, would represent the sum of $200.

* "Disposed downwards and in parallel order," a verb. noun.

Such was also the commercial valuation of the Raz. This is the ceremonial robe which I have elsewhere compared to the *mehil* of the Jewish high priest. It was originally of tanned cariboo skin, but the specimen in my possession (fig. 168) is of an old-fashioned printed stuff. Yet the fact of its main fringe being ornamented with porcupine quills and here and there with hoofs of yearling cariboo is evidence of respectable antiquity, considering the progressive tendency of the race to which belonged its maker. Exclusive of the lower fringe it measures 2 feet 2½ inches in length, and in its narrowest breadth it is 3 feet 4½ inches. The upper fringe is of red yarn, while that at the edge of the garment

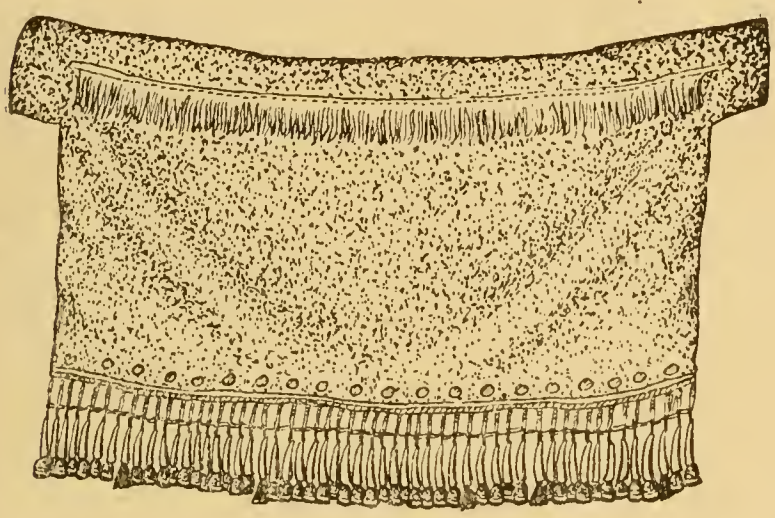

Fig. 168.

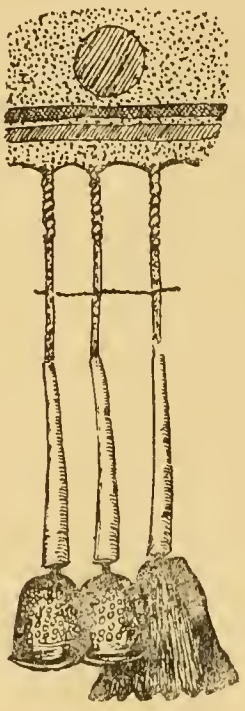

Fig. 169.

(fig. 169) is composed as follows:—Firstly, small rounds of red cloth sewn on the printed calico, then two fillets respectively blue and red running along the edge. A narrow strip of tanned skin is then sewed on, from which hangs the fringe proper. The upper part of the strands is wrapped with yellow or green porcupine quills, below which they are left naked until they are connected together at hanging intervals by a slender cord of sinew thread. After an equal length left uncovered, each strand is passed through a dentalium shell, ending in a sewing thimble or a cariboo hoof scalloped at the edge.

The lapels or side extensions at the top of the Raz are intended to button or attach it behind with strings; for though the garment resembled a robe while in actual use, it was put on and worn as an apron from the waist down. Needless to add that the metallic ornaments of

the lower fringe were well calculated to impress the bystanders by the jingling sound they yielded with the importance of the dancer.

The noblewomen wore no RAZ, but substituted therefor the cincture-like piece of apparel shown in fig. 170. Though it resembles a girdle, it was considered a breech-cloth. Of course, being merely ornamental, it was worn over the dress. It will be seen that it was almost entirely of dentalium shells without any leather lining.

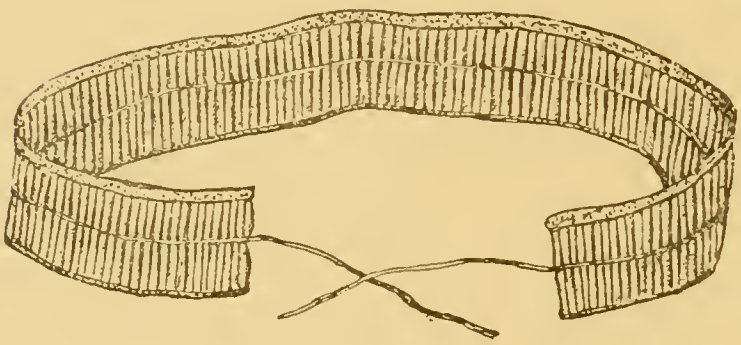

Fig. 170. ¼ size.

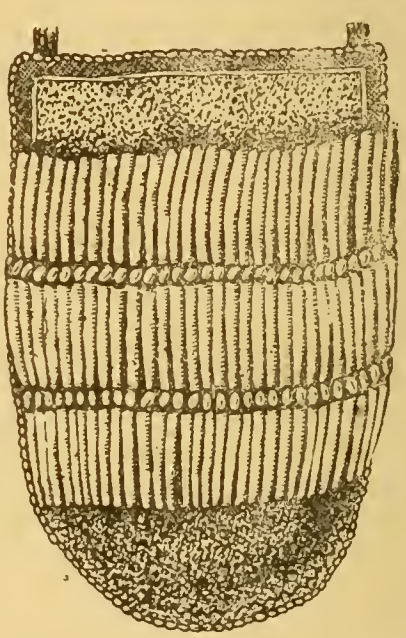

Fig. 171.

As a complement to his costume, the təneza· had his ceremonial *Kwənzəs* or fire-bag and ornamented quiver. I have never seen any specimen of the latter; but from what we know of the other pieces of festal attire, we may well imagine it glowing as the rest with the ubiquitous dentalium shells and fringes The fire-bag shown above (fig. 171) is mainly of cariboo skin with glass beads stitched on the edges and red and blue trimmings. It belonged to the original possessor of the RAZ already described and is therefore contemporaneous therewith. This old man died five or six years ago at the age of 105 years or thereabouts.

The mocassins and leggings were also similarly ornamented on festival occasions. Truly, the Carrier "nobleman," standing in the midst of an admiring assemblage, crowned with the weird head-dress of his ancestors, resplendent in the glory of his moon-like breast-plate, clothed in the folds of his sonorously fringed robe, with his shining fire-bag hanging on the left and his jewelled quiver on the right, and bedecked from head to foot with snow white shells, must have been a sight worth beholding.

This is perhaps the proper place to mention another variety of head-dress which, though ceremonial in intent, was not the appanage of titled

personages. I mean the *shyas-'kei* (grizzly-bear-claws). Its name denotes the nature of its material. These claws are secured to a band of cariboo skin by means of sinew threads passed in a hole bored through their root part. A double row of dentalium shells two lengths between each claw, runs through their upper or slender half, ensuring by means of the sinew thread on which they are mounted solidity for the crown and unity for its component parts.

Fig. 172.

The grizzly bear is the lion of our mountains, and those who presume to wear its spoils thereby lay claim either to supernatural power or to uncommon courage. Such are the medicine men or shamans and a few untitled hunters too proud of their deeds and supposed prowess not to parade them on every available occasion. Such then were the natural possessors of this curious head-dress. I must add that the shamans did not confine their extravagance to the wearing of this crown; the spoils, generally the head, of any other wild beast, the wolf, the coyote (*canis latrans*) the black bear, etc., were also laid under contribution to help to impress the bystanders with the awfulness of the powers they were supposed to be endowed with. But this was only while in the act of practising their occult art.

One peculiarity of the preceding cut cannot fail to strike the reader. It is the mode of wearing the hair therein illustrated. This style was common among the Carriers. When at home, or anywhere when in repose, they had it plaited in a queue resting on the back; but when travelling they found it more convenient to tie it up in a knot behind the neck. Both men and women—except when widowed or in mourning

from some other cause—wore it full length and parted in the middle. Clipping the hair was a token of extreme grief or the badge of forced servitude.

Small tattoo marks will also be observed in the above figure, and not without reason. For tattooing was formerly very prevalent among the Western Dénés. This was not, as among the neighbouring heterogeneous tribes, confined to the chest or the arms and legs, but it extended in every case to the face as well. Various designs were thus indelibly stamped; but the face tattooing consisted more generally of lines, single or parallel, radiating from the mouth corners, on the chin, the cheeks, the forehead and occasionally, the temples. Fig. 173 represents an extreme case. Two women of this place—Stuart's Lake—are thus tattooed. Face tattooing had nothing to do with the totem crest, personal or gentile, of the bearer.

Fig. 173.

When figures were attempted, they consisted of crosses, fishes, birds, fern root diggers, etc., in conventional outlines, all of which will be delineated when I come to treat of the Déné pictography.

The breast was also tattooed, but not so commonly as among the Coast tribes. The figures marked thereon had generally a totemic significance. A much coveted tattoo was the symbol of the grizzly bear (fig. 195) the marking of which cost many a ceremonial banquet and entitled the person thus honoured to exceptional regard.

The forearms, inwardly and outwardly, were more often the seat of tattoo marks. When there situated, these referred as a rule to a personal totemic animal revealed in dream, and the bearing of whose symbol was supposed to create a reciprocal sympathy and a sort of kinship between the totem and the tattooed individual. Sometimes these marks on the arms and legs were intended as a specific against premature weakness of these limbs. In this case, they simply consisted of one or two transversal lines on the forearms or immediately above the ankles which were tattooed on the young man by a pubescent girl. These had about the same significance as the sinew and down wristlets of which mention has already been made.

Tattooing was performed, as among other American tribes, by puncturing the skin with fine bone (or later steel) needles, and by passing underneath a sinew thread coated with crushed charcoal or soot.

The face was also either painted with broad lines of red ochre alternating with black, or the cheeks only were made to receive a coating of rouge. Personal taste and fancy were the only rules followed. Young persons were also fond of trimming their eye-brows to a diminutive width, after which they blackened them with charcoal.

CHAPTER XI.

HABITATIONS.

It has already been stated that of the three tribes under consideration two, the Carrier and the TsiɁKoh'tin, were semi-sedentary, while the other, the Tsé'kéhne, was entirely nomadic. Consequent upon this different social status was, of course, the nature and style of the habitations proper to each. Thus the Carriers, whose social system was very elaborate and whose staple food was salmon, had formerly no less than five distinct kinds of dwellings, the ceremonial lodge, the summer lodge, the fishing lodge, the winter lodge, and, among the southern half of the tribe, the subterranean hut.

In common with the coast tribes whose social organization they had largely copied, the Carriers had formerly, as well as now, regular villages which they inhabited but part of the year. But while the former chose the winter months to enjoy the sweets of home life, the latter were never to be seen in their permanent dwellings except during the fair season. This may easily be accounted for when we remember the differences of climate. The coast owes to its proximity to the ocean the comparatively mild, if damp, weather it constantly enjoys, while east of the coast range of mountains, the winters are usually very severe. Now, as among the inland tribes, nobody, however wealthy, sleeps in more than one blanket, a large fire is kept in the lodge day and night, and so the amount of dry wood available in one place is soon exhausted. Since they are possessed of carrying conveniences unknown in olden times, this necessity of shifting one's abode from place to place is not so much felt. But formerly with their limited facilities for felling trees and bringing the wood home, they had to change every year their winter quarters.

The permanent village was thus inhabited only during the fair season, that is from the first week in May, when the grebes arrive, until the second week of September, after the family supply of salmon has been secured. The villages are generally situated at the confluence of rivers, or on the northern banks of lakes, so as to have the benefit of the sun's rays from the opposite side. In any case, the location is chosen in such spots as seem to promise the greatest fishing facilities. They were formerly composed of the ceremonial and the common summer lodges. As these differ in plan and material from those illustrated or described by writers on the coast Indians, I feel justified in giving herewith plans and explicative details of both.

And first as to the ceremonial lodge (fig. 174). It is so called from its being the seat of all large native gatherings, such as festival banquets, distributions, dances, etc. It serves at the same time as the dwelling

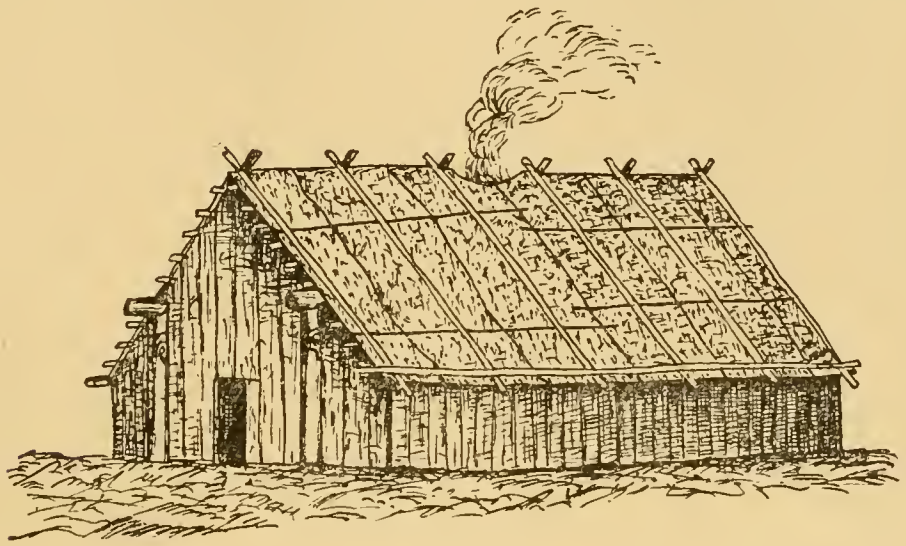

Fig. 174.

house of the nobleman to whom it belongs and of such co-gentile families as it can contain. Its erection was the occasion of great festivities and necessitated the accumulation by the future proprietor of

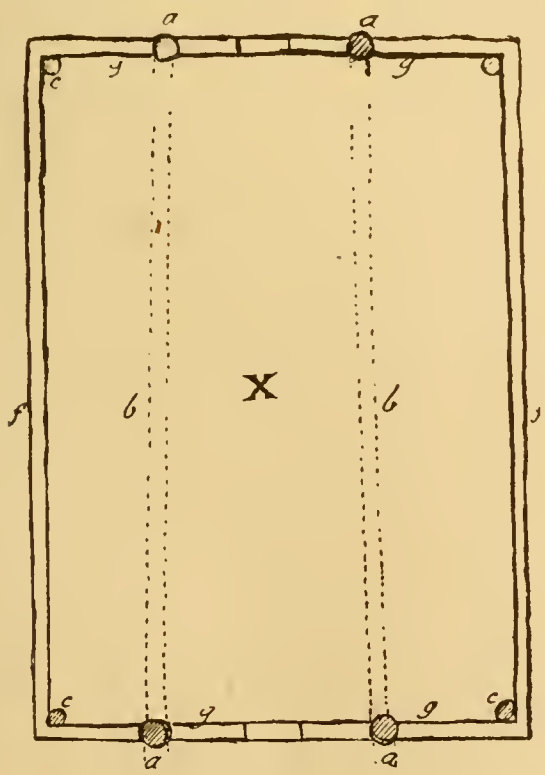

Fig. 175.

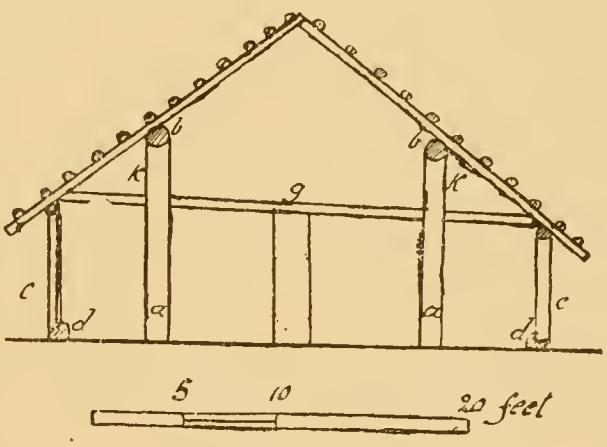

Fig. 176.

large quantities of eatables and dressed skins. Following step by step the progress of its building, which was diversified, as on the coast, by intervals of merry-making and feasting, we will proceed to a brief

description of the lodge, the ground plan and front end of which will be found in figs. 175 and 176.

The main timbers of the building consist of the posts *a* and the beams *b*, placed so as to form a parallelogram. The former are of spruce of as large dimensions as can be found. After they have been cut to the required length, they are hauled on skids to the place of construction. Let me say here that as these posts—four in number—are the mainstay of the house, they are regarded by the natives with feelings akin to reverence which are furthermore excused by the circumstance of the totem animal of the proprietor being generally carved in relief not far from their upper end *k*. For this reason, the place of honour is at their base and, in ceremonial gatherings, the noblemen were invariably seated against them, surrounded by their co-gentile suite.

After the logs had been stripped of their bark, they were rendered as smooth-surfaced as possible by means of repeated scrapings. When standing in position, their longitudinal half was made to jut out of the plank wall. Not uncommonly, they were also painted with red ochre, when a mash of carp roe served as oil and was smeared over the posts so as to prepare a sticking surface for the colouring matter. As a precaution against too early decay, the butt end of each was wrapped around with birch bark prior to its being covered up with earth.

The head of these four posts or pillars is hollowed to receive two large cylindrical beams or plates, *b*, which are cut a little longer than the length of the future lodge, so as to let their ends project in front. Four secondary posts of smaller size, *c*, are next erected on the outside of the parallelogram at equal distance from the first and form the corners of the house. They likewise support on hollowed ends two smaller plates, *f*, over which the eaves of the roof are to rest. The ends of two transversal beams of moderate dimensions, *g*, the object of which is to further solidify the structure and especially the gable walls, are then laid in a notch cut out on these minor plates. The foregoing pieces constitute the frame of the building.

Once they are in place, the erection of the roof is proceeded with As this is even to-day constructed on the same principle as formerly, it deserves special mention. The rafters, *h*, are secured together at the top of the roof by means of *'kən* or wattle of high cranberry bush (*Viburnum pauciflorum*) passed through holes pierced in the proper places. Over these are tied with willow bark, at intervals of one or two feet purlines which are then covered with spruce bark. This is secured in place principally by means of additional rafters laid over it and pressed down

by a long beam to which their lower extremities are attached (see fig. 174). As a further guarantee of solidity, slender poles are finally inserted between the bark roofing and the outside rafters. Of course an aperture is left open in the top of the roof for the smoke to escape.

There now remain the walls to construct. They consist of hewn slabs of spruce which were formerly shaved on the outside as smooth as the working tools then available permitted. The lower end of these rude planks was introduced in a channelling prepared therefor in the large beams, *d*, lying on the ground, while their upper end was engaged between additional poles running under the eaves or along each side of the gable.

Large lodges had generally two entrances, one at each gable end of the building. Their lintel was formed by the transversal, beams, *f*, and they were shut by regular board doors as is practised to-day. However, I have seen a ceremonial lodge whose doorways were simply cut in the end walls some distance above the ground, and were elliptical, as marked in outline in fig. 176. Such lodges were called *horwə-ltaz-yə*R, or "house with cuts through."

There never were any windows in the old style lodges. Full ventilation was however established through the doors, the smoke hole and the numerous wall chinks consequent on the sinking in of the boards.

The fire-place was in the centre of the building, and fire was made immediately on the floorless ground. Only two or three stones served as andirons for the wood to lie upon. The family meat or fish was, and is still, commonly either roasted by means of a wooden spit passed therein and stuck in the ground near the fire, or boiled in a kettle supported over the flames through a long stick likewise driven in the ground at a distance from the fire.

No shutter was used in connection with the smoke-hole as is done among the Haida, nor was the floor covered with any boards.

The sleeping places only were strewn with spruce branches and undressed skins, over which everyone stretched himself in his blanket with most of his clothes on. All had their feet next to the fireplace, instead of each married person having them at the head of his or her partner, as is common among the Blackfeet,* and the Eskimo.†

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* Legal, *Les Indiens dans les plaines de l' Amèrique du Nord, Petites Annales O.M.I.*, Paris, 1891.

† After Rod. MacFarlane, Esq., who has passed several years among those aborigines.

There was in the lodge no partition whatever.

Sometimes related families found themselves too numerous to dwell all under one roof. Rather than cohabit with people of a different gens, they would then build for themselves the smaller summer lodge (fig. 177). Quite a number of these old fashioned buildings are still extant. They differ considerably from the large ceremonial lodge: instead of four *înyəs-tcən* or principal upright posts, they have only two, one in the middle of each gable end. To facilitate the semi-circular hollowing of their upper

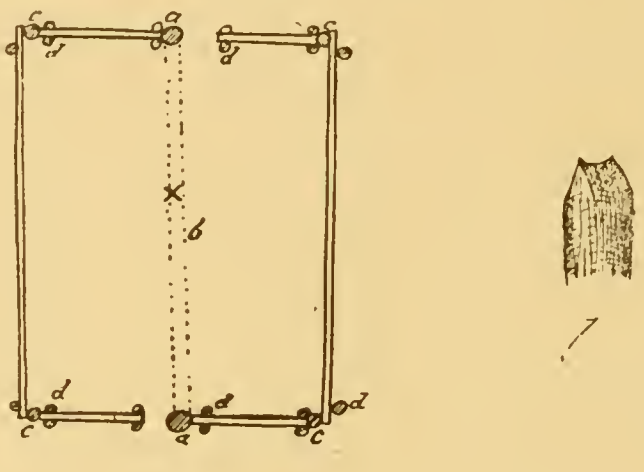

Fig. 177.

ends, these are previously thinned on each opposite side into a tapering edge (fig. 177 *b*). Four *înyəs-səl* or secondary uprights, *c*, stand in the corners of the lodge. As the walls are to be superimposed poles, minor posts or stakes, *d*, are planted in the ground in pairs on each side of the wall whenever this is necessary to prevent the latter from tumbling down. After the posts of the walls have been inserted between the two opposite posts they are furthermore secured thereto, three or four together, by means of willow bark ropes. Such unimportant habitations have indifferently one or two entrances, generally without any door. Their apex is formed as in the preceding case by the transversal piece, *e*, which rests on each end of the eaves-plate. When two doorways exist, one will be on the right, the other on the left, of the main upright post in the middle.

The roof is in every respect similar to that of the ceremonial lodge. Speaking of the latter, I failed to mention that the eaves project a considerable distance from the walls.

A few ceremonial lodges were also built on the same plan as the minor dwelling houses. Their material was identical, save that instead of poles hewn planks formed the walls. In that case the totem crest was carved out of the protruding end of the top plate (fig. 188). A few even had

only one door. The place of honour was then just opposite the door, as among the Blackfeet.*

Another variety of Carrier dwelling which is inhabited only during *thal-lo-ñrən*, or the salmon season, is the fishing lodge. In general appearance it resembles the summer dwelling lodge just described, but is, if possible, more rudely constructed. Its ground plan is identical, but it wants the gable end walls above the transversal beams. The large openings consequent thereupon leave free access to the wind and air and thus accelerate the drying of the fish which are suspended on cross poles resting transversely on the top sticks of the side walls. By exception, a few of these lodges have the apex of their front adorned with the carved totem crest of the proprietor. It may be remarked that these fishing lodges are not mere sheds for the exclusive destination of smoking and curing fish ; they serve also as dwellings for the fishermen during the whole space of time that they are used.

We now come to the winter lodge of the Carriers. We have already seen that, at least among the upper Carriers, new winter quarters were chosen every year in such spots of the forest as promised to yield the best supply of firewood. These habitations were therefore of a merely temporary nature. Yet they were carefully built, the greatest attention being always paid to the comforts of those about to winter therein. They were original in construction, and deserve a full description.

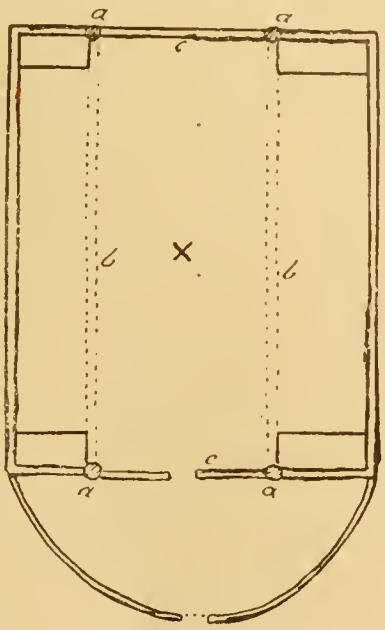

Fig. 178.

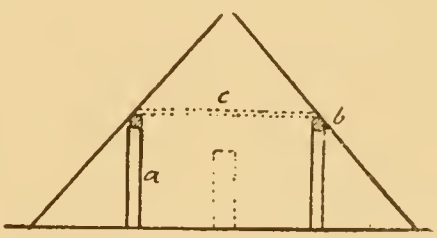

Fig. 179.

Four *înyəstcən* or posts of moderate size with hollowed upper ends were planted in the ground and supported the usual longitudinal plates.

* Legal, *uti suprà*.

On these parallel plates split poles of spruce or cotton wood were made to recline in a slanting position so as to form a roof without walls, the split side resting immediately on the beams. To ensure additional solidity, the lower end of each stick was slightly driven in the ground, or covered up with earth. The middle ones were purposely shorter, so as to form a smoke hole in the top. A covering of spruce bark was then added, each piece of which was steadied by means of independent sticks resting thereon.

There now remained the gable ends. As with the other styles of native buildings, a *thapa-sə'a* or transversal beam (*c* of fig. 179) was laid on the side plate, *b*. Slender posts or stakes were next planted on the same plan in an upright position to fill in the end of the lodge opposite to the front. Fascines of spruce boughs or saplings were moreover laid against this wall on the outside, and all possible interstices were carefully chinked up by forcing in shoots of conifers.

The front end was more complicated. As comfort and warmth were the chief aims of the builders, the structure had but one entrance. This was obtained by introducing immediately under the apex of the gable down to the transversal plate a broad slab of spruce securely wedged between the wall posts or stakes driven in the ground. The aperture left free underneath constituted the doorway. This was shut by an independent board just a shade narrower, so as to move easily. It was suspended by means of a stout rope, and to go in or come out you need only push it ahead of you ; its own weight would cause it to return to its original perpendicular position, and thus only a minimum of cold air would steal in the building. As a further precaution against the inclemency of the season, the front end of the lodge was provided with a semi-circular door-yard with an additional door. This sort of native *atrium* resulted from a number of heavy poles or posts being made to rest at their small end on the gable wall, while their lower extremity described a half circle on the ground. The whole was then covered with brush. The outer doorway was shut with some worthless skin with the hair on, while the ground within the enclosure was strewn over with small branches of conifers, generally spruce. This enclosure, besides contributing to render the hut warmer, served also as a kennel for the dogs and as a bathroom for the old men. Its native name was *pən-tsiʃ* (a word of the third category of nouns).

In the ground plan, fig. 178, the space between the uprights and the corners of the lodge is purposely partitioned off. It forms what was known as the *'kûnt'ʃat tsatcən* or corner store, the sides of which consisted mainly of roughly hewn boards set up to the height of three or

four feet. Therein the family impedimenta were stowed away, and the number of such depositories generally corresponded to that of the cohabiting families.

A totally different style of winter dwellings obtained among the Tsi|Koh'tin and, through them, among the Lower Carriers. This was the *tɬizKən* or semi-subterranean hut. It had been borrowed from the two tribes' neighbours in the south and southeast, the Shushwap. Dr. F. Boas has already given * the plan and description of one which is probably of a representative character, while more lately Dr. G. M. Dawson has furnished us † with an example of a different style observed by himself among the Shushwap. None of these however tallies in point of construction with the *tɬizKən* of the Lower Carriers such as it existed among them some forty years ago. From information gathered from an eye-witness, I am enabled to give the following account of those constructed at Fraser Lake and Stony-Creek.

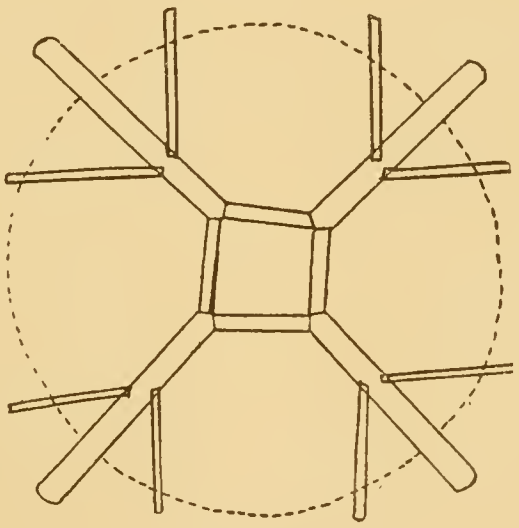

Fig. 180.

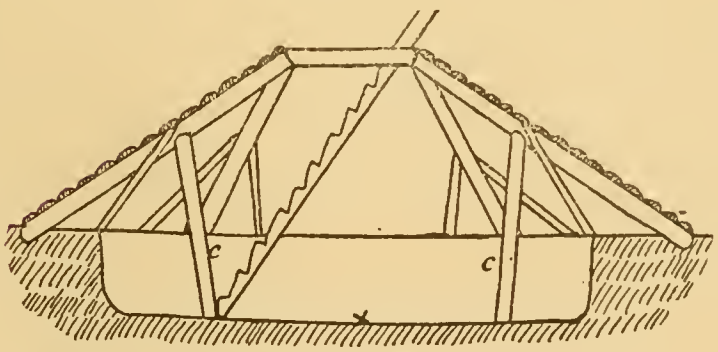

Fig. 181.

After an excavation some three feet deep and about 20 feet in diameter had been made, the butt ends of four large beams were made to rest a

* Sixth Report on the N.W. Tribes of Canada, figs. 20 and 21, Leeds Meeting B.A.A.S. 1890.

† Notes on the Shushwap People of B.C.; Trans. R.S.C. Sect. II., fig. 1, 1891.

little distance from the brim, on the original surface of the ground, while the beams converged with their small ends raised five feet or thereabouts to a point above the excavation, which was to become the door and smoke hole of the hut. These timbers were held up by means of four short pieces of wood, the end corners of which were wedged or locked in those of the larger beams, as shown in fig. 180. The aerial square orifice resulting from this combination was the doorway of the building. No other timbers were added to this frame-work, save that to further solidify the structure, two, or in larger huts, three, stout posts, *c*, forming a right angle with the main beams were planted in the floor with their upper ends notched in the beams, over which split poles were laid horizontally up to the top or rather the door.* This roof was then covered with earth. An Indian ladder—that is, a log notched at the proper stepping intervals—was the means of communication with the outside.

These huts were very comfortable, and but little fire was needed to keep them warm. From the Tsiꞁkoh'tin names of the months we learn that they were occupied from October-November, but how long cannot be ascertained from that source. If we are to judge from a myth current among the same tribe, it would seem that these subterranean dwellings were, in olden times, spring as well as winter homes, since they are mentioned therein as being inhabited as long as the root digging season

The habitations of the Tsé'kéhne, whether in winter or in summer, are built after the eastern or conical model. Four long poles with forking extremities are set up one against another, the lower ends of which form on the ground a square on the dimensions of which will depend the size of the lodge. A score or so of other poles are then set up in a circle. the top of each resting on the point of intersection of the first four. In winter, small fascines of spruce are laid horizontally all around the lower perimeter of this frame, so as to leave as few points of access as possible for the cold air from underneath the outer covering, which is then wrapped around the cone resulting from the converging poles. This covering consists of dressed moose skins sewn together, and its perpendicular edges correspond to the entrance of the lodge. They are either buttoned or clasped together from four or five feet above the ground up to the top. On one side of the opening thereby produced is sewn a smaller skin, which forms the door. Two sticks attached transversely thereto on the inside give it the requisite consistency, while the upper one, which slightly projects beyond the edge of the skin door, serves as a latch, its projecting

* As shown in the accompanying cuts, minor logs were however added to the main timbers, so as to facilitate the roofing of the hut.

end being, when necessary, fastened with a string to the adjoining part of the lodge covering. The smoke escapes through the interstices between the converging poles left uncovered at the top. To guard against snow, rain or adverse winds, an additional piece of skin is sewn on the outside from the apex of the conical covering down to some distance, while its free side is secured to a long pole planted in the ground close by. This appendage is utilized as a shutter wherewith the top opening of the lodge is partially or entirely covered, as the state of the weather may suggest.

The summer lodge of the Tsé'kéhne has sometimes two entrances, and in this case the outward covering generally consists simply of two blankets or skins stretched over the frame poles, one between each door, The upper half of the cone is thus left uncovered.

Summer and winter, the fire is started right in the centre and, instead of the wooden tripod used among the Blackfeet to suspend their kettles,* the Tsé'kéhne prefer a stick reaching horizontally at the proper distance above the fire to two opposite poles of the frame to which it is fastened.

Carriers, Tsi|Koh'tin and Tsé'kéhne, nowadays more generally use, during their summer travellings, either cotton tents, or shelters composed of three or four sticks thrust slantingly in the ground, over which a sheet of cotton or canvas is spread. The latter style of shelter was probably the only one known among them prior to the introduction of European textile fabrics, save that, of course, a moose skin replaced the canvas or cotton sheet.

Of course the child of the forest, when in his primitive state, can boast the possession of no artificial means of reckoning time or measuring long distances. But Dame Nature provides him with a seldom failing standard measure in the shape of the sun, the course of which is familiar to him, no matter how far he may have swerved from beaten paths. Long distances are determined by the number of camps, and shorter ones by the position of the sun in the heavens. The sun serves also as his watch by daytime, and its bearings are easily taken in by the native mind. After it has left his pine-clad mountains to illuminate unknown worlds, the aborigine again looks up above to ascertain how long he will be deprived of its beneficent rays. The Great Bear then becomes to him the hands of a God given clock, and the distance it has travelled around its axis, the polar star, over the dial which we call the heavens, is very seldom, if ever, misreckoned. The Western Dénés are familiar with a few constellations which are, as among us, called after mythic personages; but none is

*Rev. E. Legal, *loco citato.*

so widely known as *Yihta*, the Great Bear. We have already seen the role it plays in the story of the Gambler; I must be pardoned for reproducing here another legend wherein it is to be recognized under a different garb, but playing a no less important part. As will soon appear, if fable it is, sociologically speaking, it is a fable with a moral.

"There was a young man who was impatiently awating the return of daylight to set out on a hunting expedition. Again and again he would look up at Yihta, and in his impatience he exclaimed: 'That old Yihta,* how slowly he walks!' Very soon after having uttered these words, he left for the chase.

"He had not gone far before he became aware by the barking of his dogs that they had scented game. After what appeared to him as a run of but a few moments, he overtook his dogs, and lo! sitting on a log was a man of beautiful countenance, carefully painted in red stripes over the cheeks, and holding a walking stick in his hands. He had a malicious smile on his face, so that the young man felt abashed in his presence and afraid to approach him. 'Come on,' said the stranger who was no other than Yihta, 'come on, young man. So you laugh at me and say that I walk too slow? Now learn that to reach me you have travelled a very long distance, since to help you I have contracted the surface of the earth. Go back then to your home, and take this staff to aid you on your long journey. Whenever you want food, hold it perpendicularly on the ground, then drop it and observe the direction in which it falls: if it falls in the direction of the northern wind, do not go that way, for there famine is awaiting you. If it falls towards the setting sun or towards the rising sun, go either way and you will find bears to kill, both male and female. Do likewise when you feel uncertain as to the direction of your house; and when you get home, hang the staff up in the branches of a tree. Above all, beware lest a woman having her menses catch sight of it.'

"At these words, the young man took the walking stick without however giving much credence to the stranger, for he believed his home was but a short distance from where he stood. Yet these words were literally fulfilled, and during his long peregrinations, amidst incessant fatigues and ever recurring privations, the young man owed his life to his careful observance of the stranger's directions. Many were the years he travelled, and he seemed to get a glimpse of his lodge several days before he really reached it. When he finally got home, he was an old man with hair white as snow, and his lodge was crumbling down through age and decay."

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* *Ntən Yihta'qəl!* Expressive of scorn.

From this short Carrier myth, the sociologist will learn that:—Firstly, the observation of the Great Bear as a means of reckoning time was a national custom among Carriers. Secondly, the heavenly bodies were regarded as quasi divine powers which it is wrong to speak lightly of, a deduction which might easily be proven to be legitimate by other points of Carrier psychology. Thirdly, to look handsome, a Carrier of the old stock must paint his face. Fourthly, the Carriers had a correct idea of the immensity of the universe. Fifthly, the injunction not to travel in a northern direction might perhaps be interpreted as a reminiscence of the tribe's migrations southwards. Sixthly, a woman having her menses is legally impure, and must be deprived even of the sight of any object endowed with magic powers. Lastly, more than one of those writers who are so fond of parallelisms between American mythologies and the Biblical narrative will no doubt be tempted to compare the beneficial, food-giving and road-finding staff of the young traveller with the marvellous miracle working wand of Moses which, during similarly life-long peregrinations, opened the way and found water where none was to be seen. This suggestion, however, is given for what it may be worth, and I must leave it to others to decide whether it is not too far fetched.*

Now that we have extracted *morals* enough from our fable, we revert to the description of the few items which still claim our attention.

If my information is reliable, there were formerly no fortified villages among the Western Dénés. One should not however infer from this that there was no warring among them; on the contrary, I think I am warranted in stating that atonement by compensation for losses of life, even involuntary or accidental, was much less practised here than on the Coast. But hostilities were seldom of so general a character as to involve whole villages, though some such cases are recorded in the traditions of the tribes. More commonly they were restricted to two different gentes, and their cause may have been the killing of a man openly or, as was supposed, through the black art of the shamans. In the latter case, the dying person usually revealed the name of the magician to whom he attributed his death, and nobody dreamt of questioning the truth of his would-be revelation. Naturally, more than once personal grievances must have been thus avenged. The cognate families of the real or fancied murderer would then expect reprisals at the hands of the co-gentile families of the deceased, and they would erect, generally in secluded spots of the forest, what was called *pəR-pa-yəR* or "a house for

* The TsiɬKoh'tin possess a different tradition, the principle hero of which works innumerable marvels with the help of a magic wand which they call *'toR*, a word not employed to designate any other kind of wand or staff.

the war." This primitive fort consisted of a log-house as solid as possible under the circumstances, with a strong log roofing, over which a square breastwork of small diameter was built with the same material. If not taken by surprise, the besieged shot at their assailants through loop-holes pierced in this rude stronghold, the existence of which was concealed by fascines of coniferous branches piled on the roof up to the top of its walls. Similar porthóles were also cut in the walls of the house itself for service in case of a sudden attack. As a further protection against such a contingency, an addition with a second door was always made to the front end of the house. Frequently a building similar in appearance, but really of no strength whatever, was erected in close proximity so as to deceive the enemy and give time during an attack on the wrong work to the besieged to prepare for the defence. The only Déné "fort" I have ever seen was constructed just as described, but wanted the roof breastwork.

An indispensable adjunct to the native dwelling house is the *tsa-tcən** or provision store. There is stowed away the dried salmon, which is the daily bread of both Carrier and Tsiɬkoh'tin. But while both tribes practically live on the same diet, their store houses very materially differ in construction. Fig. 182 is the Carrier tsa-tcən which, as may be seen, is an aerial building. The distinctive characteristics of all these provision stores are faithfully reproduced in the cut; but their minor details nowadays vary not a little. I have chosen for illustration that which approaches nearer to the traditional type. It consists of two parallel frames planted upright in the ground, the component parts of which are furnished in the middle with transversal beams upon which rests the floor of the tsa-tcən proper. With the exception of the front end, the whole is made of heavy poles superposed one upon another or laid in close juxtaposition, as the case may be, and fastened to the frame of the building by means of *'kən* or high cranberry bush wattle. The front end is entirely of boards. All the wall poles being laid with their larger ends in the same direction, a slight inclination results at the top, which constitutes the roof of the building. This is furthermore covered with spruce bark.

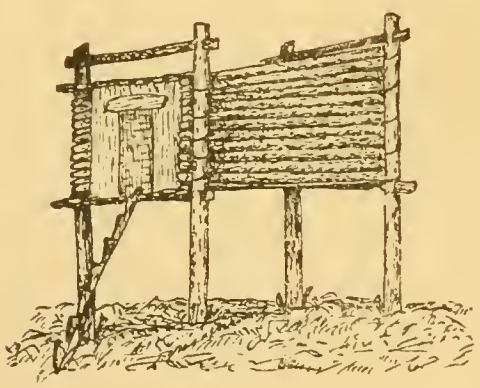

Fig. 182.

* Literally: "beaver-stick." I can see no reason for this etymology.

The tsa-tcən of the Tsi[Koh'tin are not so elaborate, since they are nothing else than small and very rude, though solid, log huts built right on the ground (fig. 183) and, as a rule, quite a distance from the regular village, while their Carrier counterparts are generally very close to the habitations.

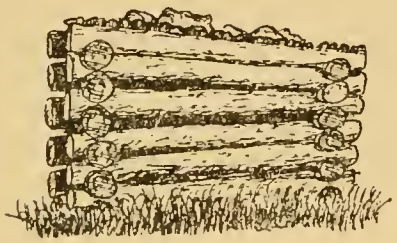

Fig. 183.

The Tsé'kéhne have nothing to do with salmon, and consequently the need of provision stores is not so urgent among them. Yet when they happen to be blessed with an abundance of dried meat and wish to preserve it for future use they erect sorts of scaffoldings immediately against the trunk of a tall tree which are to them the equivalent of the Carrier tsa-tcən. These consist of two long, heavy sticks crossed and firmly bound to the trunk of the tree at their point of intersection, while their ends are secured to some stout overhanging branch by means of strong ropes. Rough boards or split sticks are then laid across this frame which form a floor over which the meat or any other eatable is deposited, carefully wrapped over with skins or spruce bark. Even the bear cannot get at those *caches* without previously demolishing their floor, which is practically impossible.

The careful observer who would take a fancy to travelling along our chief salmon streams could not fail to notice, in some spots immediately over the banks, numerous excavations or pits which betray an artificial origin. These are all that remain to-day of the salmon cellars of the prehistoric Carriers. Aerial stores were then as now the regular family larders ; but not unfrequently the natives of the old stock preferred to cache down their fish in temporary cellars which had the advantage of keeping it fresher than the common store-house. A matter of taste as regards the salmon itself, this caching down in the ground became a necessity relatively to its roe, which was buried, wrapped in spruce bark, until it had reached an advanced stage of putrefaction, when it was relished by the native palate as the *ne plus ultra* of delicacy.

The last item more or less connected with aboriginal habitations is the sweat-house or sweating-booth.* According to Dr. G. M. Dawson, this usually consists, among the Shushwap, "of about a dozen thin willow wands, planted in the ground at both ends. Half of them run at right angles to the other half, and they are tied together at each intersection. Over these a blanket or skin is usually spread, but I have also seen them covered with earth. A small heap of hot stones is piled in the centre,

* *Tsè-zəl*, "stone-hot," a word of the third category.

and upon these, after carefully closing the apertures, the occupant porsu some water. The sweat-house is always situated on the banks of a stream or lake, so that on issuing therefrom the bather may at once plunge in the cold water."* One single point—and that a very unimportant one—differentiates the sudatories of the Carriers from those of the Shushwap: I mean the covering, which among the former is of spruce bark. Here, as further south, these sweat-houses are invariably to be found near a stream or lake; but the reason of this is merely that our Indians never dwell away from the water, for I have never heard of a Carrier taking a cold bath immediately after his steam bath. It may also be worth mentioning that, more often than otherwise, steam-bathing was originally practised for quite other than sanitary motives. It was quite commonly prompted by a desire on the part of the "patient" to ensure success during a forthcoming hunting or trapping tour, or to atone through this penitential act, for any transgression, wilful or involuntary, against the traditional laws and customs of the tribe.

* Notes on the Shushwap People of British Columbia; Trans. R.S.C. Sect. II., 1891, P. 9.

CHAPTER XII.

Monuments and Pictography.

A search for "monuments" among such a primitive people as the Déné cannot be but unproductive of satisfactory results. Indeed, throughout the whole territory of both the Tsi|Koh'tin and the Tsé'kéhne, not a single work is now extant which could, with any degree of appropriateness, be classed under that head. Even such as may now be seen among the Carriers are—barring funeral monuments—exceedingly scarce. All of them may be reduced to two distinct categories: wooden, carved monuments, and painted or drawn monuments. Hence the two divisions of this chapter: carved monuments and pictography.

Carved Monuments.

Genuine carved monuments are to-day very few, and seem to have always been so among the Carriers. Indeed so scarce are they that every one of those now extant will easily be illustrated herewith. I shall pass over the totemic columns of the Hwotso'ten which are still in a good state of preservation, for the reason that their carving and erection were the work of their exogenous neighbours, the Kitikson, whose nearer village stands hardly three miles off. Those monuments are merely witnesses to the influence exercised by outsiders over a very unartistic race, and the custom of erecting them had not been adopted by the main bulk of the Carrier tribe. This cannot be said of the famous commemorative mortuary columns so common all over the North Pacific Coast, and which had been appropriated as far inland as the boundaries of the Tsé'kéhne territory. All of these have long disappeared, with the exception of the two herewith represented, which I sketched ten years ago at ⌐rak, a village site among the Nutca'tenne, the population of which is now extinct. These columns are a further corroborative evidence of my thesis, viz., that the Déné race has no eye for the beautiful. Compared with those of the Coast Indians, they stand in the relation of an undeveloped embryo to the matured being. As is well known among Americanists, such works served as depositories for the few remaining charred bones of the deceased, and were erected in close proximity to the village. The two specimens figured below are rather plainer than the average mortuary column of the Carriers since, according to my informants, the totem crest of the deceased was generally carved in

relief thereon. These monuments were, as a rule, grouped according to the different clans obtaining among the tribe. This arrangement has survived in the column fig. 185, which now stands at Fort Babine in the

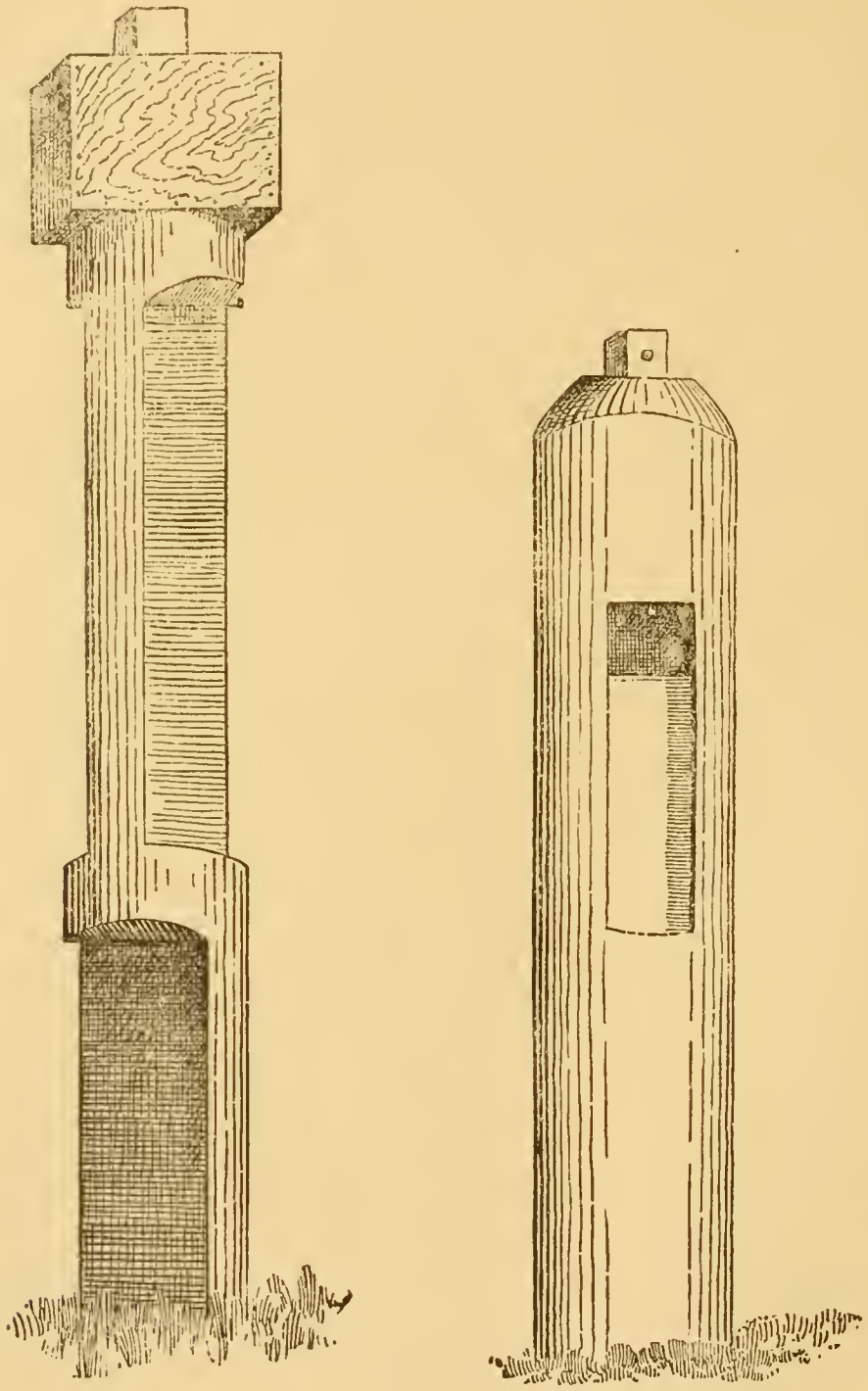

Fig. 184.

midst of the graves of *Tsa-yu-ne*, one of the native gentes, the chief totem of which is the beaver. It was, of course, erected in pre-Christian times. Such is also the case with regard to the grave shown in fig. 186,

whose occupant was likewise a fellow of the Beaver clan. His grave is to be found at *Tsé-tcah*, on the confines of the Hwo-to'tin territory.*

Fig. 185.

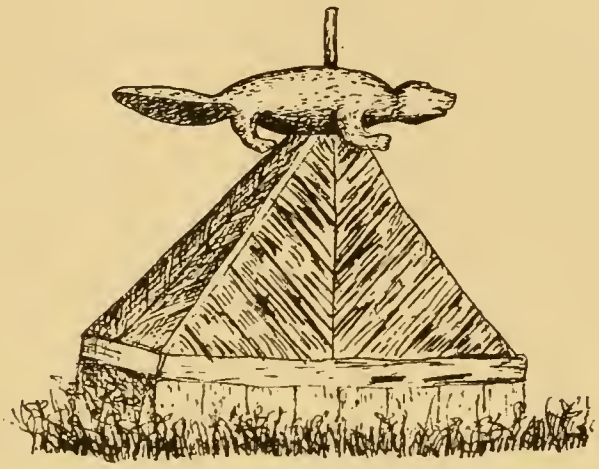

Fig. 186.

In fig. 187 the totem crest of the old days has been replaced by the Christian symbol which now appears over all the native Déné graves. These monuments affect a multitude of forms and designs, though by

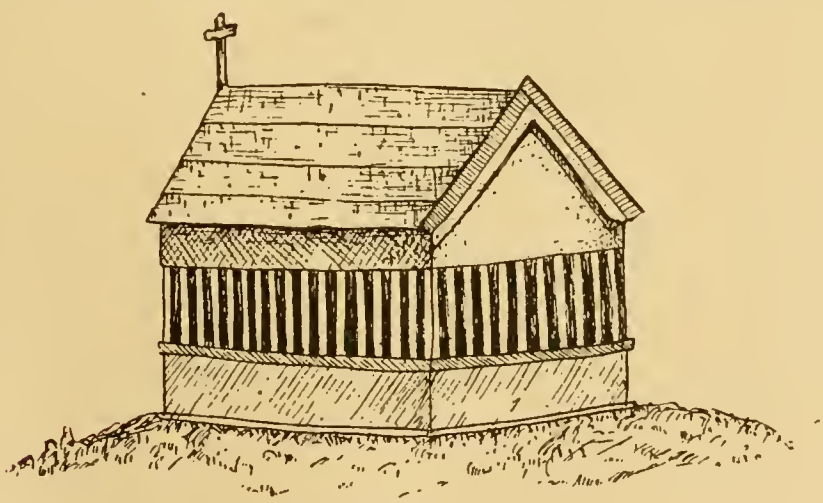

Fig. 187.

far the greatest number of them resemble, in a general way, that herewith illustrated. It is over a late grave, and is painted in several gaudy

* See the map affixed to my paper; Are the Carrier Sociology and Mythology indigenous etc.? Trans. R.S.C. Sect. II., 1892.

colours, the severity of the black and white of the rubrics being repugnant to the native taste which sees in such works no monuments of grief or sorrow, but rather affectionate tributes to the memory of the dead which it behooves one to make as showy as possible. This explains why some of them are so absurdly large, sometimes graves, even of children, being covered with "monuments" affecting the shape, and almost the dimensions, of rectangular cart-sheds.

To the above let us add the wooden totem crest ornamenting two native houses and we will have the sum total of all the carvings now to be seen throughout the whole territory of the Tsi|Koh'tin, the Carriers and the Tsé'kéhne. Of these sculptures, the first only (fig. 188) can

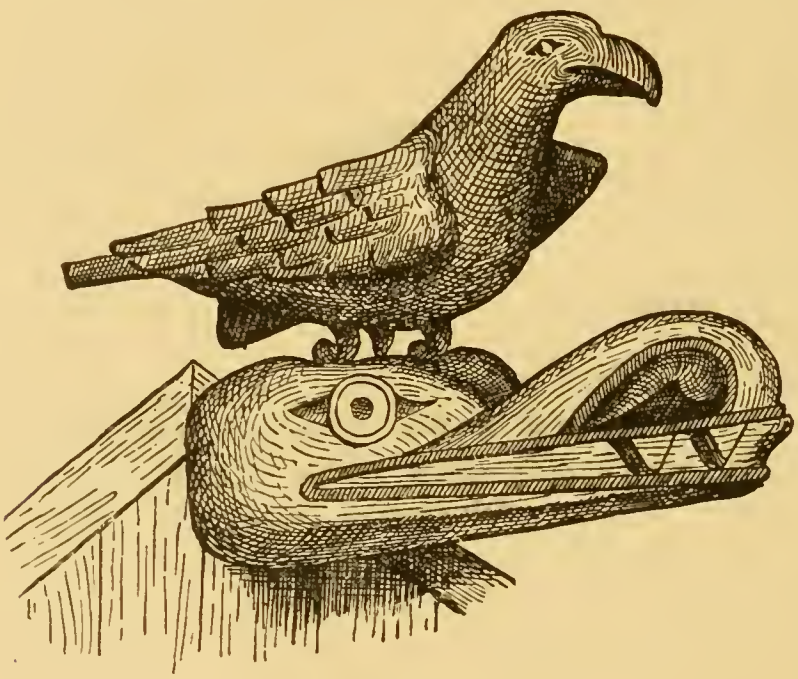

Fig. 188.

boast a few scores of years. It represents a raven standing over the head of some marine animal—possibly the orca. The reason of this incongruous coupling may probably be seen in the fact that the inhabitants of the place wherein the totems are to be found are of mixed parentage, as they have considerably intermarried with their western neighbours, the Bilqula. The last carving (fig. 189) is quite modern. The owl thereby represented has been carved out of a balsam poplar tree (*Populus balsamifera*) and adorns the front gable end of a fishing shanty at the outlet of Lake Stuart.

References to the totems and gentes of the Western Dénés have been frequent in the course of this monograph, and, especially in view of what remains to be said in the latter part of this chapter, some more detailed information concerning them may be found acceptable.

F. G. Frazer, the principal authority on Totemism, says: "Considered in relation to men, totems are of at least three kinds: (1) The clan totem, common to a whole clan, and passing by inheritance from generation to generation; (2) the sex totem . . . ; (3) the individual totem, belonging to a single individual and not passing to his descendants."*

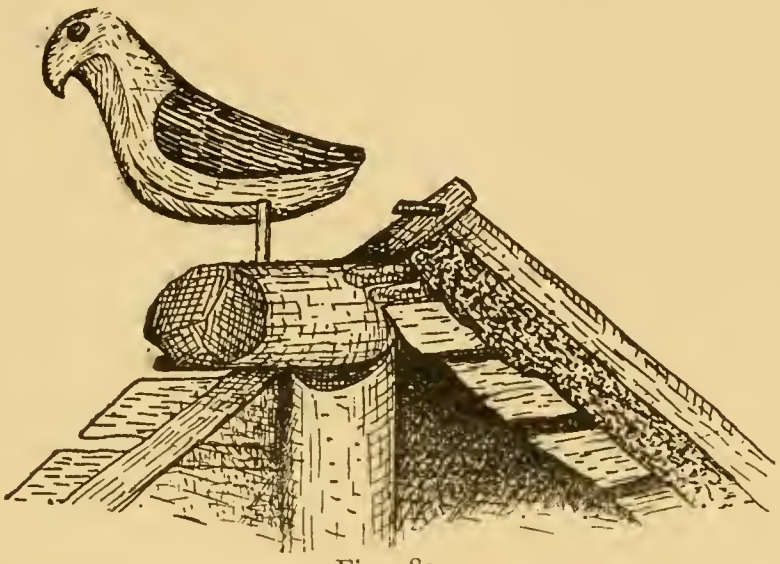

Fig. 189.

Of the sex totem I know practically nothing, as it does not obtain among our Indians; but to these three varieties of totem I can add a fourth, which I shall call the honorific totem, and of which a full explanation will be found further on. The individual or personal totem is well known as being some material object or being, most generally some animal, ordinarily revealed in dreams to a person who is bound thereafter to look upon it as sacred and to be especially revered and protected. In return for this reverence on the part of the person, the totem is believed to particularly help and powerfully protect its human relative, as the individual is supposed to be. As for the clan totem, any reader of Americana is too familiar with it to be in need of any definition or explanation. One totem generally—though not always—corresponds to one clan or gens, so that the former and the latter are very often in equal numbers. Four gentes obtain among the Carriers, of all which I herewith submit the native names together with those of their respective totems.

GENTES.	TOTEMS.
Ɂt'səməc-yu.	The Grouse.
Tsa-yu.	The Beaver.
Yəsîl-yu.	The Toad.
Təm'ten-yu.	The Grizzly Bear.†

* Totemism, Edinburgh, 1887, p. 1.

† Judging from fig. 188, it would seem that the crow or raven is regarded as the totem of some clan among the Lower Carriers. It is not known here in that capacity.

With the exception of Tsa-yu, which means "Beaver-medicine," those words are untranslatable and are probably imported from among the heterogeneous tribes from which the whole system is undoubtedly derived. The first gens, ˥t'səməc-yu, is by all odds the most powerful among the Carriers, while the two last named are considered as having a sort of affinity which entitles the members of each to mutual consideration and protection. The name of the latter, Təm'ten-yu in Babine, is changed to K*wən-pa-hwo'tenne* * among the Carriers proper.

In great native festivals, the totem of the celebrating clan was carved and exposed at the door of the lodge so that every exogentile incomer may have an opportunity of presenting it with anything of value which he may intend for the givers of the feast with the tacit, but well-known, understanding that it be subsequently paid for by a donation of at least equal worth. Even the public naming of one's gentile totem by a member of a different clan demanded the gift of a blanket, a piece of dressed skin, or any article of wearing apparel, so that the crest may not remain ignored and the whole gens thereby dishonoured.

An important sociological peculiarity which I have nowhere else noted claims attention in this connection. The clan totem is called *nətsi* in Carrier. But beside the nətsi there existed here another kind of totem which I have named the "honorific totem." It was personal and did not pass to one's descendants, though it differed from that revealed in dreams. Its native name was *shən-'koh*, a compound word which may be freely translated by "rite." It was voluntarily assumed with an accompaniment of befitting ceremonies by any titled or untitled individual who wished to advance in social standing. It entitled the owner to special consideration, though the latter could on that account lay claim to the possession of no hunting grounds nor to the exalted rank which was the strict property of the "noblemen" or *təneza*. In a word, those honorific totems created a sort of middle class, the *bourgeoisie* of the Carriers. They were many and varied, and, with the exception of one, they followed the clan in such a way that those proper to one could not be assumed by a member of another. Here are those now remembered by the natives :—

To the ˥t'səməc-yu belonged the Owl, the Moose, the Full Moon, the Weasel, the Wind, the Crane, the Wolf, the "Darding Knife," the "Rain of Stones," and the Brook Trout.

Of those pertaining to the Tsayu or Beaver gens, only the Mountain Goat is now remembered.

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* "Inhabitants of the fireside."

The Yəsîlyu had the Sturgeon, the Arrow, the Porcupine, the Wolverine, the Red-headed Woodpecker, the Cattle and the *Təlt'sâ*, a kind of fabulous animal resembling a gigantic toad, with large, bulging eyes.

My informants know of only the Goose as belonging to the Təm'tenyu clan.

Another honorific totem or crest was called *Sənnaɻ*, a word of extraneous origin. The exact nature of this cannot now be defined, as the mimicking accompanying its exhibition is but vaguely remembered. All that is known for certain is that it was very highly appreciated and, as a rule, it was the appanage of the notables exclusively. For here I must remark that even the notables or noblemen were not debarred from assuming one or more of the different honour crests proper to their gens.

Luɻem is another word of forigin origin which designated the Bear as an honorific totem.* It could be assumed by anybody, irrespective of clannish differences.

The connection of the individual with his crest appeared more especially during ceremonial dances, when the former, attired, if possible, with the spoils of the latter, was wont to personate it in the gaze of an admiring assemblage. On all such occasions, man and totem were also called by the same name. The adoption of any such "rite" or crest, was usually accompanied by initiatory ceremonies or observances corresponding to the nature of the crest, followed in all cases by a distribution of clothes to all present. Thus whenever anybody resolved upon getting received as Luɻem or Bear, he would, regardless of the season, divest himself of all his wearing apparel and don a bear skin, whereupon he would dash into the woods there to remain for the space of three or four days and nights in deference to the wonts of his intended totem animal. Every night a party of his fellow-villagers would sally out in search of the missing "bear." To their loud calls: *Yi! Kəluɻem!*† he would answer by angry growls in imitation of the bear. The searching party making for the spot where he had been heard, would find by a second call followed by a similar answer that he had dexterously shifted to some opposite quarter in the forest. As a rule, he could not be found, but had to come back of himself when he was speedily apprehended and conducted to the ceremonial lodge, where he would commence his first bear-

* The Déné word for Black Bear is *ɜ̄əs* or *ɜ̄as* according to the dialect.

† Words of Tsimpsian parentage meaning apparently: Come on, Bear! The nature of those words plainly denotes the origin of the whole institution.

dance in conjunction with all the other totem-people, each of whom would then personate his own particular totem. Finally would take place the potlatch of the newly initiated "bear," who would not forget to present his captor with at least a whole dressed skin.

The initiation to the "Darding-Knife" was quite a theatrical performance. A lance was prepared which had a very sharp point so arranged that the slightest pressure on its tip would cause the steel to gradually sink into the shaft. In the sight of the multitude crowding the lodge, this lance was pressed on the bare chest of the candidate and apparently sunk in his body to the shaft, when he would tumble down simulating death. At the same time a quantity of blood—previously kept in the mouth—would issue from the would-be corpse, making it quite clear to the uninitiated gazers on that the terrible knife had had its effect, when lo! upon one of the actors striking up one of the chants specially made for the circumstance and richly paid for, the candidate would gradually rise up a new man, the particular *protégé* of the "Darding Knife."

PICTOGRAPHY.

"All the known graphic systems originate in a picture-writing as rude as that of the American Indian or of the South African Bushman. All have advanced from the picture to the conventionalized hieroglyphic representing an idea or a word; while from the hieroglyph has sprung the syllabary represented by rougher sketches of the monumental emblems, and requiring a smaller number of necessary symbols. Finally among the more civilized of ancient races the alphabet was gradually introduced as a simplification of the syllabary which reduced the necessary emblems to about a fifth of their previous number."* Gauged after this criterion, the Western Dénés may be said to have been in a state of transition between the first and the second stage of graphic culture; or perhaps, it would be as correct to say that they were already in the second while retaining lingering reminiscences of the first. Their petroglyphs were in a large measure pictures with some admixture of conventionalized forms; but their usual means of communication while travelling and their tattoo marks had, to a great extent, become the mere shadows of the original pictographs.

Of their rock inscriptions I cannot find any better specimen than that reproduced in fig. 190. Its most conspicuous character represents a grizzly bear, the tracks of which may be seen some distance behind. The waving lines at the bottom stand for water, wherefrom a sturgeon

* From an article in the "Edinburgh Review," reproduced in Little's Living Age, Aug. 23, 1890, p. 451.

is seen emerging. The natives are not agreed as to the meaning of the large spider-like figure to the left, but the probability is that it is intended to represent Yihta, the Great Bear. Immediately above is a toad in a somewhat conventionalized shape, while below, and to the left, are two figures of birds, the lower one of which is a grouse. The other signs are the emblems of fishes, figures of men or symbols of objects which cannot now be identified. There is no *ensemble* or unity in the whole. It is only an aggregate of pictures or signs painted in red ochre by different individuals and at different times. Most of them are very old.

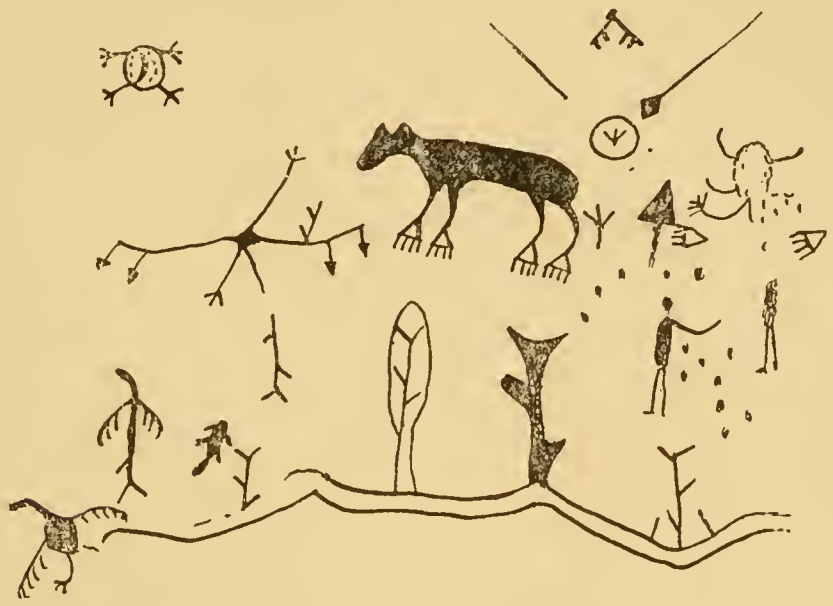

Fig. 190.

The various objects represented are personal totems, and the object in view in depicting them on rocks will be better understood by a reference to the locality of the inscription reproduced above. It is to be seen about half way between this place, Stuart's Lake or Na'kraztli and Pîntce, the nearest village by water. By painting in such a conspicuous place the totem which had been the object of his dream, the Pîntce Indian meant to protect himself against any inhabitant of Na'kraztli, as the intimate connection between himself and his totem could not fail, he believed, to reveal by an infallible presentiment the coming of any person who had passed along the rock adorned with the image of his totem. Thus it will be seen that clairvoyance had adepts even in such an out of the way place as Stuart's Lake.

Fig. 191 is, of course, a mere picture. The oval circle wherein the cariboo stands is intended to represent a mountain. A shield is instinctively called to mind by fig. 192; but the natives are positive that this is a false impression, as the inner circle stands for a den within or upon a mountain. The four figures between the two circles are the known

emblems of the beaver; but the meaning of the whole figure is not very clear. Such is the case with fig. 193, wherein some say we have a crane, while others profess to see therein some large species of beetle.

Fig. 191.

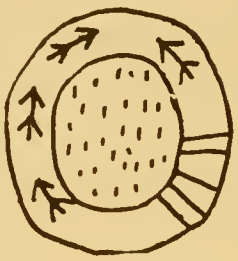

Fig. 192.

Fig. 193.

So far we have dealt with signs or pictures such as seen in stone inscriptions only. But it is chiefly through the tattoo markings or the signs occasionally executed in charcoal while travelling that the Carriers have shown their departure from the earliest or pictorial stage of the graphic art. Even within such classes of totemic representations the gradual alteration from the pictorial or life-like forms to the mere conventional outlines is easily discerned. I need adduce no better illustration

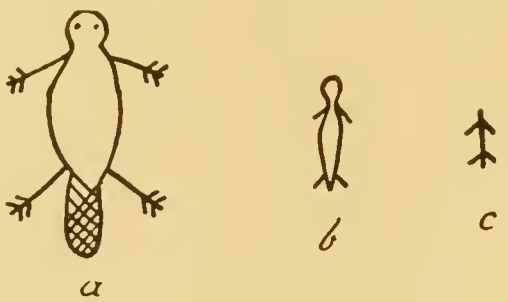

Fig. 194.

of this than the three styles of representing the beaver shown in fig. 194. *A* is the original pictorial form, and is adopted whenever the beaver is tattooed on the breast; *b* is a middle, altered form, with a strong tendency to simplification, and is used in connection with face tattooing, whilst *c* is the conventionalized form of the same, and is the common mode of representing the beaver in those rude, ephemeral drawings in the woods, though it is occasionally found even in ancient rock inscriptions.

I have already stated that tattooing on the breast was rare among the Western Dénés. This is so true that I know of no other totemic marks there situated than the few exhibited herewith. We have just seen that *a* stands for the beaver, *b* represents a toad, *c* and *d* are the fore and hind paws of the grizzly bear, while *e* is the figure of the moon.

All the face tattoo marks which can now be seen or remembered among the Carriers are found in fig. 196. They may be briefly described

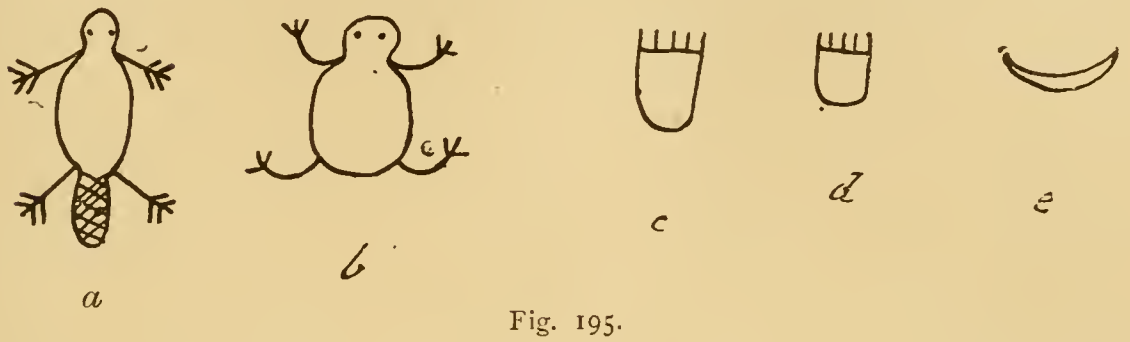

Fig. 195.

thus :—*a* is the emblem of the otter ; *b* that of any fish ; *c* that of a bird ; *d* is a beaver ; *e* is the *silhouette* sign of a stick in the water ; *f* that of a

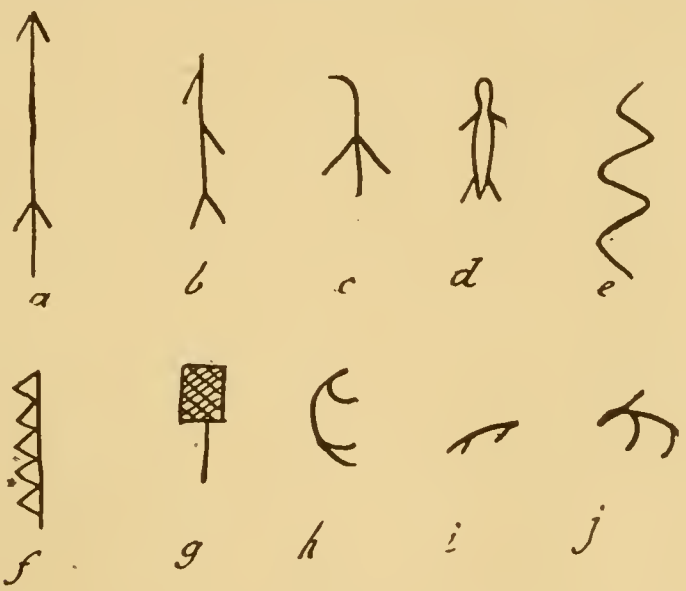

Fig. 196.

mountain ; *g* is a fern root digger ; *h* is the symbol of the marten ; *i* that of the lizard, and *j*, that of the cariboo.

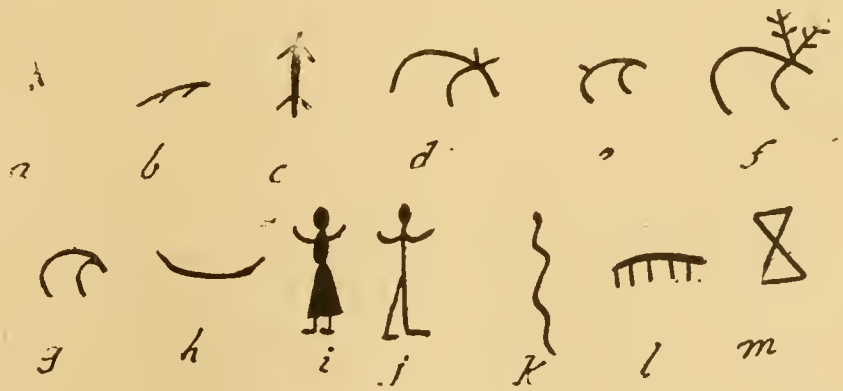

Fig. 197.

Fig. 197 presents us with the graphic signs used as means of communication between different hunting parties. They alone might be

pointed to as the elements of native "writing." The two last are taken from rock inscriptions. They are now unintelligible to the Carriers. Here is the meaning of the others:—*a*, bird; *b*, lizard; *c*, beaver; *d*, bear; *e*, lynx; *f*, cariboo; *g*, marten; *h*, canoe; *i*, woman; *j*, man; *k*, snake.

These are generally drawn in charcoal on trees or, by exception, on stones, and as such it must be confessed that they afford but a very restricted medium of expression to the native mind. It has therefore to call into requisition any other material means which may be at hand, and it must be said that the use made of them is sometimes wonderful. I was lately travelling in the forest at a time when the yearly re-appearance of the salmon was eagerly looked for. At a certain spot not very far from a stream we came upon one of those aboriginal drawings made by an old man who had no knowledge of the syllabic signs now used to write the Déné languages. The drawing represented a man with a woman, a horse with a burden, the emblem of a bear with three marks underneath, and a cariboo. Above the whole and hanging from a broken branch were four pieces of young bark cut out in the conventional form of the fish. Now the message was instantly read by my companions, and it ran thus: "Such a one (whom they named)* has passed here with his wife, and a good load of furs, after having killed three bears and one cariboo; and furthermore he captured four salmon *two days ago*. He is now gone in the direction that we follow ourselves." This date could evidently not have been told had the Indian marked with charcoal the sign of the salmon. He was so well aware of this and was so much intent upon fixing the time of the first appearance of the fish that he had had recourse to the pieces of bark, the relative degree of freshness of which he knew could easily be determined by the experienced eye of his fellow Carrier.

This leads me to detail the various non-graphic means of communication between the different bands of huntsmen. Does the traveller intend to mark his passage in the forest? He cuts a switch or rod and plants it in his trail pointing to the direction he is following. Is he in distress, and does he beg for succour at the hands of those who he knows shall pass by the same trail? Forthwith he breaks or bends the top of as many shrubs as possible all along his path. No native party will profess ignorance of his meaning nor, as a rule, leave unheeded his appeal. Other significant combinations will be found sketched in our last figure. Thus *b*, a stick broken by the middle, means: "we are going to camp a

* They identified him by the very circumstance that he travelled with a horse, as he was the only one likely to pass there who possessed such an animal.

short distance off. You need not be in a hurry". *C* has the opposite meaning: "we are going to camp a long distance from here; hurry up!" By disposing the stick as shown in *d*, the natives are understood to say: "we have turned back awhile, but finally gone on." *E* is intended to represent a piece of burnt rag hanging from a bent down rod; it is the signal of famine and an appeal for help, the direction of the stick always

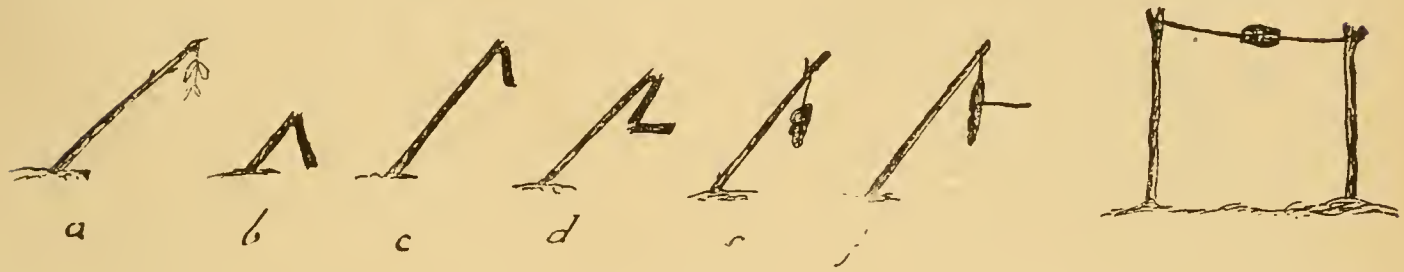

Fig. 198.

pointing to the trail of the distressed party. If, instead of parched rags, an abundance of cariboo or moose hair is to be seen on the stick, the reading must be just the reverse. It is then a notification that the party has killed plenty of cariboo or of moose, and, at the same time, an invitation to go and help dispose of them. *F* is a small bunch of dry grass wherein a small rod has been driven as an indication that a member of the band has been shot. Lastly, when a short stick is found hanging across the trail, as shown in *g*, everybody will understand that a person in the preceding party has come to his death from natural causes.

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ADDENDA ET CORRIGENDA.

Page 25—After paragraph 4 add the following as an additional subdivision :—Hwozahne, two villages, namely, Stony Creek (Sai'kəz), population 88, and Laketown or Nuɬkre, population 65, both of which are situated a little south of Fraser Lake.

Page 30—After "Fort George" insert:—Hwozahne, south of Fraser Lake

Page 35—Strike out "the Eskimo" and add :—to which might almost be added the Eskimo, were it not that J. Murdoch (Ethnological Results of the Point Barrow Expedition, Ninth Ann. Rep. Bur. Ethnology, Washington, 1892) states that he obtained from a Point Barrow tribe three fragments of a sort of pottery, the material of which "was said to be earth (nu'na) bear's blood and feathers, and appears to have been baked" (p. 91).

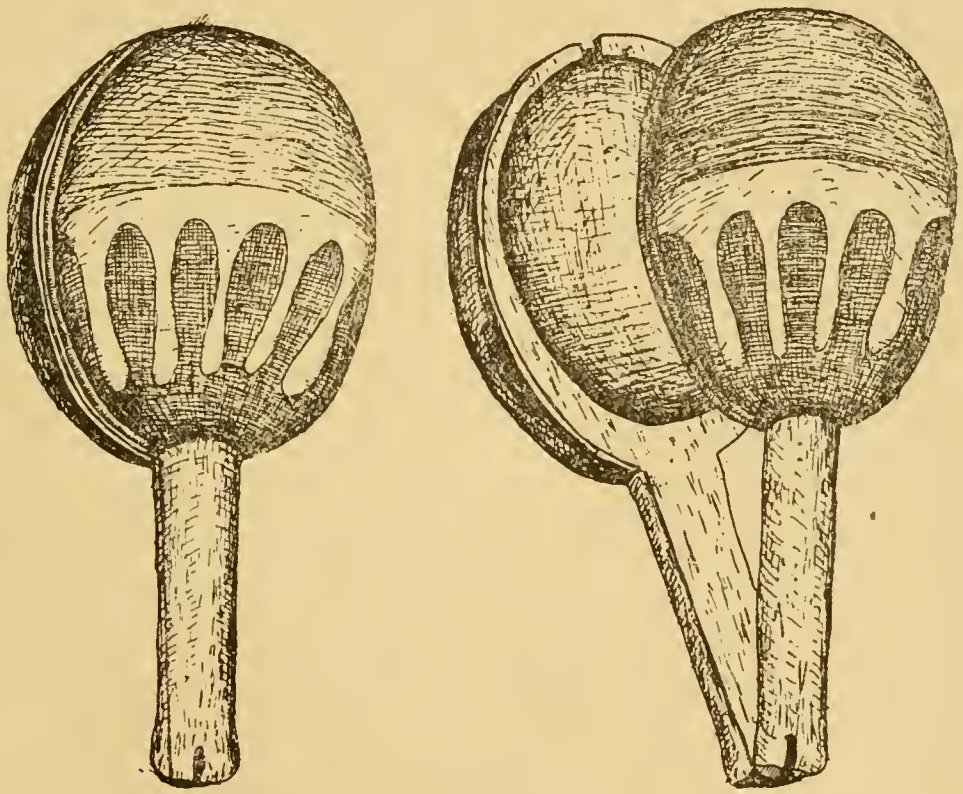

Fig. 199.

Page 118—Dele the whole paragraph beginning "These other objects" and substitute :—Three other objects, which as sociological items were also due to the influence of the maritime tribes, but had become naturalized among, and were made by, the Carriers, were the *nîɬrwəs* or medicine-rattle, the *hanə'taih*, or ceremonial mask, and the *t'sak*, or long, festival dish. These were almost the only objects of art of genuine Déné manufacture to which I can point, and yet I do not think I unduly depreciate my Indians' artistic capabilities by adding that they were rather below than above the average of similar aboriginal carvings. The appositeness of this remark will become evident by a comparison of fig. 199, wherein we have a representative Carrier medicine-rattle, with illustrations of similar implements so frequently met with in modern essays on the Northwest Coast Indians. As may be seen by the cut *b*, the Déné rattle is made of two hollowed halves bearing some resemblance to wooden dippers. Its material is birch, and its only ornamentation is in paint, not carving. The figure explains the mode of connection of the two parts of the rattle.

The masks were used only by mimics accompanying by grotesque gestures and jerkings of the head the dance of a privileged few; but the rattles served a double purpose: they did service in connection with a notable's dance, being then held in the hand by the dancing personage himself, and also as an accompaniment to the incantations of the *təyən* or shaman. No ceremonial masks of genuinely Déné make are now available for illustration: but such objects are, even at the present day, so common among the natives of the Pacific Coast that they hardly need any description. It may suffice to refer the reader unacquainted with North American aboriginal paraphernalia to the plates or figures illustrating. . . .

Page 181—After "their occult art" insert:—Let me add that some of these head-dresses, while retaining the name of *cyas-krei*, were composed of beaver-teeth, sometimes daubed with red ochre. One such specimen recently came into my possession which lacks the double row of dentalium shells usual with crowns made of real bear's claws.

SESSION 1892-93.

FIRST MEETING.

First Meeting, 5th November, 1892, the President in the chair.

Letters were read from the American Society of Civil Engineers and from the United States Weather Bureau.

Donations and Exchanges since last meeting, 1552.

The following were elected members: — Miss Marcella Wilkes, W. H. Marcon, Dr. Oronhyatekha, R. H. Bowes, W. Morrison.

The following gentlemen were, on the recommendation of Council, elected corresponding members for three years:—R. G. Haliburton, Q.C., F.R.G.S., Dr. T. W. Beemer, Rev. A. G. Morice, O.M.I.

The following motions were passed:—

Moved by J. C. Hamilton, seconded by Prof. Macallum:—

"That this Institute recognizes with very sincere regret the great loss it has sustained since its last session in the death of four of its honoured members: — His Honour Sir Alexander Campbell, K.C.M.G., Sir Daniel Wilson, LL.D., D. A. O'Sullivan, LL.D., Q.C., and Nelson G. Bigelow, M.A., LL.D., Q.C., M.P.P., and that a minute of this resolution be entered in the Transactions of the Institute."

Moved by Dr. Kennedy, seconded by Alan Macdougall:—

"We, the members of the Canadian Institute, ask to be permitted to add our tribute of respectful regret and sorrow on the loss sustained by our province in the death of Sir Daniel Wilson. For over thirty-eight years a member of the Institute, he took a deep interest in its progress, enriching its Transactions by numerous contributions of his talented pen. Elected President in 1859, he for many years afterwards remained a constant and warm friend till in 1884, as a tribute to his interest in our work and a respectful recognition of his labours in Literature, Archæology, and Ethnology, he was elected an honorary member, the highest distinction the Institute could confer upon him. The Institute at this its first meeting after his death records its appreciation of the services rendered by Sir Daniel Wilson, mourns for the loss it has sustained, and conveys to his family its respectful expression of sympathy in their great and deep affliction."

Moved by Prof. Macallum, seconded by James Bain, Jr. :—

"The Council and members of the Canadian Institute desire to tender to Professor Loudon their congratulations on his appointment to the Presidency of the University of Toronto, and to express the hope that he may long live to occupy the position for which he is so well qualified. They rejoice to see in this appointment of a former President of this Institute to the highest office in the Provincial University, a tribute to the character of the scientific work done by the Institute and an augury of a continuation of the close relations which should exist between the two leading scientific bodies in the province."

Mr. J. W. L. Forster then presented to the Institute a portrait of Sandford Fleming, LL.D., C.M.G., which was acknowledged by the President.

Mr. Forster, in handing the portrait to the President and members, said :—

"Sirs,—There are not many ways in which I can directly advance the scientific departments of the Institute, but this task was undertaken with the hope that in some way it would serve to encourage and deepen the interest in the work you are doing. I was moved to the act also because of my humble opinion no one better deserves this recognition at your hands than the subject of the picture in view of his services in the past and present relationship to the Institute, and I was prompted to this by the knowledge that what is mortal of men will vanish from our sight, and there are men whose memory is worthy of being cherished. The hope is indulged in that this portrait will by this service be prized for generations to come.

The President said in reply :—

"There are jewels that we must provide with a suitable setting, and the hope is renewed that a suitable home shall soon be secured for the Institute, and that this portrait will be one of its chief ornaments. Not only is this a liberal gift from the artist, but a tribute to science from the fine arts. The Institute will jealously guard this treasure, which is a worthy tribute to its most distinguished living member."

The Secretary read a letter from Dr. Sandford Fleming, in which he regretted his unavoidable absence, and warmly acknowledged the honour conferred upon him. The letter contained some interesting reminiscences of his early connection with the Institute, and of those

associated with him in its foundation. After sketching the history of the Institute since that time, he adds :—

"I have touched on the place which the Canadian Institute has attained among modern scientific societies. The Institute is quietly and unobtrusively gaining for itself an honourable name. The work is intimately associated with the life and progress of the Dominion, and as the years come and go it will, I confidently believe, do its part in promoting the purposes of science in inaugurating needed reforms, and in advancing the best interests of society."

SECOND MEETING.

Second Meeting, 12th November, 1892, the Vice-President in the chair.

Letters were read from the Prisoners' Aid Association, and the Chicago Historical Society.

Messrs. Arthur B. Willmott and Charles B. Miller were elected members.

Donations and Exchanges, 81.

The following resolution was moved by Mr. G. Kennedy, LL.D., seconded by Mr. G. G. Pursey, and unanimously adopted :—

"In accepting from Mr. Forster his magnificent gift of a portrait of our distinguished honorary member, Mr. Sandford Fleming, C.E., LL.D., C.M.G., etc., the members of the Canadian Institute desire to express their appreciation of the unselfish devotion to art and the interest in the Institute which have prompted Mr. Forster to this generous act, and they hereby tender to him their sincere gratitude for so fine a specimen of his handiwork, which will, they trust, hand down to future generations the counterfeit presentment of one who so deservedly holds a high place in the respect not merely of the members of the Institute, but of the entire Dominion of Canada."

A. Hamilton, M.A., M.D., read a paper on the "Physiology of the Lips in Speech," of which the following is a synopsis :—

The functions, or physiology, of the lips in speech are chiefly (1) to modify vowels by the shape assumed ; (2) form the consonants called labial. The labial effect on vowels has been called "rounding." In what this consists has not been stated anywhere definitely and lucidly. To a less extent this is true of consonants. To give a lucid and true statement of lip-function is the object of the paper. It simplifies matters

to slightly notice the many muscles of the face required to express the emotions and perform other vital acts and concentrate attention on (1) the orbicularis oris, that purse-string muscle which surrounds the mouth by its action and produces the *o*-family of vowels par excellence; (2) the elevators of the upper and lower lips, causing their protrusion, producing the *u*-family of vowels. In *o*-vowels purse-string contraction or true "rounding" prevails; in *u*-vowels, protrusion. A marked parallel obtains between the orbicularis muscle surrounding the eye, shutting the lids and throwing the skin into transverse wrinkles. The elevator of the upper lid is analogous in function to the elevator of the upper lip. The Roman alphabet is an admirable one for annotating vowel sounds, because it divides the vocal scale into five grades, which (in descending pitch) are *i*, *e*, *a*, *o*, *u*. In English we appear to have developed open *o* into a new primary vowel, making *i*, *e*, *a*, *o*, *o*, *u*, as heard respectively in machine, vein, art, law, no, truth. It is remarkable that we in Canada should be so slow to adopt Roman or Continental pronunciation of Latin, while it is taught everywhere else, even in the seats of learning in conservative Britain—a reflection on our educationists which they should not be slow to rectify, unless willing to lag behind the age. The *o*-family of vowels, or those in which circular contraction is exclusive or predominant, was then taken up seriatim in English (standard and dialectic) and some chief forms in French and German. Then the *u*-family, in which protrusion prevails, was treated. The regular labial consonants *f*, *v*, *p*, *b*, *m*, were then explained as to their formation, as were also Spanish *b*, German *w*, Japanese and Hungarian *v*, Greek *b*, and *ph*, and the two consonants beginning the French words *oui* and *huile*.

THIRD MEETING.

Third Meeting, 19th March, 1892, the President in the chair.

Dr. Meredith and Messrs. Pearce and McCrossen were elected delegates to the Prison Reform Conference.

Donations and Exchanges, 70.

Prof. L. E. Horning was elected a member.

A paper by Rev. John McLean, M.A., Ph.D., on the "Social Organization of the Blackfoot Indians" was read by Mr. Alan Macdougall, C.E.

A paper by H. R. Wood, M.A., entitled, "Contributions to Canadian Mineralogy," was read by Mr. G. Kennedy, LL.D. This short paper

had particular reference to some crystals of corundum and its gem variety sapphire. They were collected with a number of other minerals at the base of the Laurentian range in the vicinity of Papineau creek, in the township of Carlow. The sapphire was found along the banks of the Yak river, weathered out from a grey granite. It has been stated by Dr. Hoffman, in notes of minerals occurring in Canada, that corundum has only been found in the township of Burgess, Lanark county, Ontario.

FOURTH MEETING.

Fourth Meeting, 26th March, 1892, the President in the chair.

The President, Dr. Clark, and Messrs. Pursey and L. J. Clark were appointed delegates to attend the Conferenee on Social Problems, on 9th and 10th December.

Donations and Exchanges, 48.

Dr. Daniel Clark read a paper on "The Brain as the Organ of the Mind." He gave illustrations on the blackboard of the exceptional arrangement in the brain of the blood circulation, and how this differed from the system in other parts of the body. He gave the apparent reasons for this anomalous construction. He described the various structures of the substance of the brain and their functions in the organism, especially as media of sensation and volition. He gave illustrations of how impressions produced on the brain are always retained, and how valuable this law is in memory. The functions of all the bodily cells were related—each according to its kind—and more especially the varied work of brain cells in all mental phenomena. The cells were the ultimate physical organisms in relation to mind operations. Brain power was determined by their number more than by brain weight. A small brain well equipped had more tone and energy in it than a large brain not thus endowed. The absolute weight and the relative weight to that of the body were not safe guides to determine brain power. The different definitions of mind were discussed, that of the theologian, that of the metaphysician, and that of the physiologist. The battle of schools raged more over definitions than over facts, as was usually the case. The localization of brain function, according to the modern schools of Fevrier, of Charcot, of Richet, and of Campanini, were explained, as was also the recently published theory of the German Wiessman in antagonism to the theory of Darwin in respect to the hereditary transmission of acquired character.

FIFTH MEETING.

Fifth Meeting, 3rd December, 1892, the President in the chair.

Donations and Exchanges, 154; also to the Biological Section, 107 bird-skins, by Dr. Walker, of Orillia.

Miss Sarah A. Flood and Mr. C. H. Keefer, C.E., were elected members.

The Secretary, for Professor Campbell, of Montreal, read a paper on "A New Reading of the Buddhist Inscriptions of India."

Mr. Andrew Elvins read a paper on "The Planet Jupiter and his Satellites." He stated that the discovery of a fifth satellite to Jupiter has caused astronomers to turn their attention to the giant planet of our system, and many who have not made astronomy a special study are more interested in Jupiter's system than they have usually been in the past. Four moons have been known since Galileo's time, and they have been so easily seen that no one has appeared to suspect that any other existed—at least until about two years ago. When we speak, now, however, of the moons of Jupiter we know there are five, and we suspect there may be more. Their distances from the planet's centre, expressed in radii of the planet, are as follows:—

	RADII.	MILES.
V.	2½	112,000
1.	6	267,000
2.	9	425,000
3.	15	678,000
4.	24	1,192,000

It will be observed that by adding the distance of the inner satellite to the next in order, we get the distance of the next, and so on throughout the series. He thought this could not be a matter of chance, but he was not able to point out the cause. The rates of the satellites in their orbits have also a peculiar feature, the most distant one, the IV., moves but half as fast as the one next inside itself, and so on throughout the series. The velocity of No. IV. is one mile per second.

NO.	MILES.
III	2
II	4
I	8
V	16

He left these facts with his hearers and requested them to seek the cause. In relation to the shape of the satellites he thought that the strong tidal action of the mighty planet would be so great that they

would be drawn out into ellipses. Secchi, Daws, and the Lick observers have seen them occasionally of this form. Satellite I. has been sometimes seen apparently double, more light being reflected from near the ends than at the centre of the ellipse.

Mr. Elvins referred to many observations of satellites, when near the limb of Jupiter, having been seen to disappear and reappear, etc. He explained this by supposing the light to undergo refraction in passing through gaseous matter recently thrown from the planet and moving in orbits near the primary. He thought it probable that all the satellites were originally thrown from the planets by the combined action of the tangential force caused by the planets' rotation, the molecular motion of the gases in the atmosphere of the planet, and by projected matter thrown from the Jovian volcanoes into space.

SIXTH MEETING.

Sixth Meeting, 10th December, 1892, the President in the chair.

Donations and Exchanges, 58.

Dr. A. F. Chamberlain was appointed delegate to attend the meeting of the American Folk-Lore Society, at Boston, on the 28th December.

The following were elected members: Prof. James Mavor, W. H. P. Clement and Joseph Antisell Allen.

Mr. A. F. Hunter, M.A., read a paper on "British Immigration into Upper Canada, 1825-1837." The population of Upper Canada at the close of the war of 1812–14 was less than 100,000. This had increased fourfold by the time of the outbreak of the rebellion of 1837, the increase having been chiefly due to British immigration. Amongst the causes that produced this rapid influx of immigrants during the period were these:—1. Attention in Britain was turned towards Upper Canada by many books of travel, the writers of which visited the country and published their travels on returning home. No other period has yielded so much literature relating to the country and its resources. 2. The free grant land policy was adopted here at an earlier date than in some of the States. Besides this, an order-in-council in 1818, imposing settlement duties on the U. E. Loyalists, militia, discharged officers and soldiers, pensioners, and all others receiving free grant lands after that date, had the effect of preventing them from holding land on speculation, and thus stimulated settlement. 3. At the passage of the Catholic Emancipation bill in 1829, despondency fell upon the Irish Protestant

peasantry of Ulster, and large numbers of them emigrated. 4. The slavery agitation in 1832 had previously produced in Britain a feeling of hostility to the West Indies, and one of favourable regard for Upper Canada, where slavery had been abolished in 1793. 5. The industrial agitations from 1818 till 1834, including Chartist riots, besides radical and anti-radical risings, forced large numbers to emigrate from the industrial centres of Glasgow and Manchester. 6. The cholera in 1832. Instances were cited of settlements formed in this province by these causes. The immigrants chiefly settled in groups, according to their nationalities, each group giving to the district it occupies the political and social features that still cling there, though it can be observed that modern methods of communication and travel are fusing the different races into a distinct Canadian nation.

Mr. Hunter also read a paper on "The Site of the Mission of Ste. Marie on the Wye; Its Possessors and Present Condition." In this paper Mr. Hunter deplored the lack of attention paid generally to historic ruins in Canada, and in particular to this old French fort of 1639 in the County of Simcoe, which is now in a neglected condition. Two years ago Mr. Boyle had suggested in his annual report that steps be taken to buy the land around the place for the use of the public, and erect a tablet setting forth in a few words the history of the spot. Hitherto, however, nothing had been done in the direction proposed. The paper gave an account of the present ownership of the site, as it is recorded in the Registry Office of the County of Simcoe at Barrie. For nearly fifty years a part of the land, on account of its associations with the early Jesuit missionaries, has been in the possession of priests of that order. The condition of the ruins has greatly changed since Europeans first settled in the neighbourhood. An account of the place, written by Rev. Felix Martin, who visited it in 1845, was read to illustrate its former condition. This is probably the earliest of modern accounts, and from it the walls are known to have been much higher then than now. As the duty of guarding the place from even further destruction belongs to the French of Quebec Province as well as to the people of Ontario, it was suggested that an appeal be made to the Governments, Dominion or Provincial, to make some provision for its preservation.

SEVENTH MEETING.

Seventh Meeting, 17th December, 1892, the President in the chair.

Mr. J. C. Hamilton was appointed a second delegate to attend the meeting of the American Folk-Lore Society.

Donations and Exchanges, 66.

Dr. Sandford Fleming read a paper on "Ocean Steam Navigation."

The following resolution was moved by Dr. Fleming, seconded by Mr. Kivas Tully, and adopted :—

"Resolved, That the subject of the 'Pioneer Ocean Steamship' having been brought to the consideration of the Canadian Institute at its meeting held in Toronto on Saturday, December 17th, 1892, it is resolved that suitable measures be taken to establish a memorial tablet in honour of the men associated with the building and sending to sea of the Royal William, in August, 1833, and that the members for the city of Toronto be requested to obtain permission for the tablet to be placed in a fit position in the Parliament buildings at Ottawa; and that it be remitted to the Council to invite the co-operation of societies or individuals, and to take such other means as may be needful, to carry out in the best manner the spirit of this resolution."

Dr. Fleming also read a paper on "Early Steamboats," after which the following resolution was adopted :—

"Resolved, That the matter of the first steamboat constructed in Canada be remitted to the Council, with the request that they will consider the propriety of dealing with it in a similar manner to that set forth in the resolution passed by the Institute to-day with respect to the Royal William."

Dr. Fleming then read a paper on "Postage Stamps," when on motion by Mr. W. H. Merritt, seconded by Mr. J. C. Hamilton, it was

"Resolved, That the Institute having heard with great pleasure the paper read by Dr. Fleming on 'Postage Stamps,' requests the Council to take into their earnest consideration the points suggested by the paper."

EIGHTH MEETING.

Eighth Meeting, 7th January, 1893, the President in the chair.

Donations and Exchanges, 133.

W. H. Brouse and F. A. Fleming were elected members.

A report was read from Dr. A. F. Chamberlain, delegate from the Institute to the annual meeting of the American Folk-Lore Society, held at Boston, December 28th and 29th, 1892. The report stated that the

meeting was very successful and well attended by members from the United States and Canada. Five of the papers read were contributed by Canadians, and among the officers elected for next year three were Canadians, the President being Mr. Horatio Hale, of Clinton, Ont., justly celebrated for his distinguished attainments in philology, anthropology, folk-lore, and kindred subjects. The next meeting of the society will be held in Montreal.

An announcement was read from the Committee on Communications of the Anthropological Society of Washington, giving a statement of the objects of that society and its programme for the current year.

Mr. James Bain, Jr., then read on behalf of Captain Ernest Cruikshank, of Fort Erie, a paper on "Captain Walter Butler and the journal of his voyage along the north shore of Lake Ontario in 1779."

The journal was accompanied by a memoir of Butler by Capt. Cruikshank, in which his military career was traced from the beginning of the American revolution until his death in battle in the autumn of 1781.

After the reading of Capt. Cruikshank's paper Mr. Bain read, by way of appendix, some extracts from the journal of Major Robert Rogers along the north shore of Lake Ontario in 1760. In the part of the journal in which he relates his visit to Toronto, as the river and old French fort were then called, Major Rogers makes the remark, "I think Toronto a most convenient place for a factory, and that from thence we may very easily settle the north side of Lake Erie."

NINTH MEETING.

Ninth Meeting, 14th January, 1893, the President in the chair.

Donations and Exchanges, 45.

Mr. Emerson Coatsworth, Jr., M.P., was elected a member.

Mr. J. C. Hamilton, LL.B., read a paper entitled, "The Algonquins of the Georgian Bay; Assikinack, a Warrior of the Odahwas," of which the following is a summary :—

Mr. Hamilton showed from statistics furnished by the Indian Department that the number of Indians of Ontario and Quebec was in 1891 about 26,600, and that they have increased by 25 per cent. in the preceding 25 years. The aborigines of the Georgian Bay district are of Algonquin tribes, Ojibewas, Ottawas, Mississagas, and Pottawatamies. The population of the Northern Ontario superintendency was in 1886, 3,343.

They held 3,120 acres under cultivation. Their crops were 4,269 bushels of grain and 1,300 tons of hay. The fish taken by them were valued at $18,500 and furs at $5,205, and their revenue from other sources was $5,850. The charter under which the Canadian Indians claim their rights is the Royal proclamation of King George III. in 1763, after the Treaty of Paris. Their lands were to be alienated only at public meetings presided over by the governor or his deputy. Care and control over them is exercised by the Dominion Government. The Algonquins of Lake Huron and Georgian Bay are divided into fifteen bands, settled on as many reserves on the shores of lake and bay. Most of them are now Christians, but a remnant of the old superstition is often found lingering among them. They meet yearly on a chosen place to dance and shoot Matci Manito, the evil spirit. They live in tribes, the regulation of their affairs being in the hands of councils chosen by themselves; the oldest system of government on the continent is in operation in their council houses. Their code of rules, when adopted and approved by the Governor-General, forms an excellent quasi-municipal system, including the management of roads, fences, schools, and pounds. They exhibit laudable interest in education and have many Public schools, and also send many of the children to the Roman Catholic schools and convent at Wikwemikong, on Manitoulin Island, and to the Protestant Shingwauk and Wawanosh Homes at the Sault Ste. Marie. Mr. Hamilton then gave an interesting account of several famous Indians of this region; of Chingalacose, the Small Pine, the noted Chippewa chief who aided Capt. Roberts in taking Fort Mackinack in 1812, and was afterwards for many years leader of his tribe in their wars with the Sioux, but was converted to Christianity under the ministration of Rev. Dr. McMurray when missionary at Sault Ste. Marie. His son, Augustine Shingwauk, gave his name and aid to the Home there established for the education of Indian children. Assikinack was a noted Ottawa chief, and under the name of the "Black Bird" figured at the taking of Fort Dearborn in 1812, and in the defence of Mackinack from American attack in 1814

His son Francis was, in 1840, when a lad, brought to Upper Canada College, where he developed good scholarly powers, and attained high places in his classes. He became Indian interpreter to the department, and in 1858 and 1859 read several learned papers before the Canadian Institute as to Indian history and customs. He unfortunately died in 1863. Mr. Hamilton then discussed the "Manaboyho" legends, and showed that these, as found in various forms among our Algonquins, are the substance of the "Song of Hiawatha," which latter name is the Onondaga or Iroquois name for the same demigod or national hero. Several

places along our north shore still retain the name of Manaboyho or Nakibozhu, among these an island in Michipicotin Bay, which is his fabled burial place. Mr. Longfellow lays the plot of his song on the south shore of Lake Superior, but the Chippewas, Ottawas, and many other of the nations named, and the customs and lore described, relate quite as much to the Algonquins of our north shores. The paper concluded by giving abstracts of a few interesting myths, or legends, related by young Assikinack when in Toronto, and which he had learned from his father and other learned men of his nation on the Great Manitoulin Island, where the brave old warrior and his talented son lie now side by side in their last resting place at Wikwemikong.

TENTH MEETING.

Tenth Meeting, 21st January, 1893, the President in the chair.

Donations and Exchanges, 93.

A communication was read from the Royal Academy of Sciences of Turin respecting the ninth Bressa prize, to which, according to the testator's will, scientific men and inventors of all nations will be admitted. A prize will be given to the scientific author or inventor, whatever be his nationality, who during the years 1891-94, "according to the judgment of the Royal Academy of Sciences of Turin, shall have made the most important and useful discovery, or published the most valuable work on physical and experimental science, natural history, mathematics, chemistry, physiology, and pathology, as well as geology, history, geography, and statistics." The sum fixed for the prize, deducting the income tax, will be 10,416 francs.

Mr. Edward Meek read a paper entitled "Lessons from the Times and Teachings of Cicero." The lessons drawn from the times were "political" —using the word in a general sense—teaching the causes which contributed to produce the condition of the Roman Commonwealth as it existed in the age of Cicero, its subsequent dissolution, the overthrow of democratic government, and the establishment of imperial military rule. As war was the chief business of the nation, the successful generals became the greatest men—the popular idols. The people gradually turned their attention, and transferred their allegiance from the Senate and magistrates, to the generals of the armies. The Senate, from the foregoing and other causes, lost its control of the popular mind and over the popular leaders. These leaders began to contend with each other for

the mastery. The strongest and most fortunate ultimately became supreme. Julius Caesar was thus produced and the old constitution and senatorial supremacy expired. The second part of the paper was devoted to "Lessons from the Teachings of Cicero," quoted largely from those writings of Cicero which teach and discuss the moral duties.

ELEVENTH MEETING.

Eleventh Meeting, 28th January, 1893, the President in the chair.

Donations and Exchanges, 33.

Mr. Alan Macdougall, C.E., and Mr. James Bain, Jr., were appointed representatives on the Board of the Industrial Exhibition Association.

Rev. Philip Tocque, A.M., read a paper on "The Great Fires of St. John's, Newfoundland, from 1816."

TWELFTH MEETING.

Twelfth Meeting, 4th February, 1893, the President in the chair.

Donations and Exchanges, 53.

R. N. Wilson, of Fort McLeod, Alberta, was elected a member.

Mr. W. A. Sherwood read a paper on "Hindrances to American Art." He said there could be no phase of art thought more difficult to grasp than that which fell to his lot that evening to discourse upon. Long before the revolution, to the very foundation of colonial life, might well be traced the fundamental basis of "Hindrances to American Art." The Puritans, justly indignant at the licentious character of the English court, carried their dislike to the utmost verge of practice. Painting, royally encouraged in the palace of the Stuarts, fell a victim, like many sister arts, to the contempt of the new colonists. Their homes and places of worship were absolutely free from every kind of decoration. Thus, through a whole century we could pass without any advancement along the line of art. Indeed, the only semblance to adornment was to be found in the basket work painted by the aborigines. In the next century the same condition continued to exist, although, indeed, marked by the birth of Benjamin West. Those of them who were familiar with the biography of early American painters had but to recall that amusing incident of West appearing before the fathers of the Church to answer

for his conduct. After much prayer and pleading young West was permitted to practise his art, yet from the indifference and lack of patronage he, who might have laid the foundation of American art, was forced to make a royal retreat and find his home in England. The dawn of the Republic was characterized by no art movement. From the great tide of immigration one would expect at the time an absolute change of front, but what were the conditions of to-day, and what were the causes? A brief analysis, he thought, would suffice. The German immigrant, for instance, though rapidly adopting new political principles, still cherished fondly the early impressions made upon him in his native land. Industrious, toiling, of thrifty habits, he soon acquired a fair amount of wealth. The children visited the home of their fathers, and the great art galleries of their old land became all in all to them. They returned deeply impressed with a love for pure German art; nothing American in art for them. The same may be justly said of the descendants of every nationality. From such a condition what hope to evolve an American art? The art of the nation ought to reflect the thought of the nation, being in touch with the varying phases of light and shade through which the nation is passing. The art of mediæval times formed a great chapter in the book of history, and gave an insight into the mode of thought which engrossed the middle ages. It was purely European, inferior to the work of later centuries, yet invaluable from its native and primitive character. It was historical. If Canadians hoped to have a native art they must insist upon treating it from some national point of view. Then as the centuries passed a distinctive character would unfold itself, embodying and marking and reflecting the thought of the people in its varied development. While the thought expressed by speech and writing lives long, it does not survive that represented and expressed on polished marble, imperishable fresco, and the canvas on which genius has imprinted its sublime ideals. Art is the great conservator of thought. It lives and shines forth in its might when books are forgotten and the names of earth's great writers are become obscure. This is an age of light. The dim lighted cathedral is a thing of the past, the dread wizard of the cave has been transformed into an angel of light, and the magic wand into a sceptre of righteousness. It is an age electric. Art should reflect it—brilliant, varying with every phase of thought, and without any trace so far as subject is concerned of foreign thought.

THIRTEENTH MEETING.

Thirteenth Meeting, 11th February, 1893, the President in the chair.

The following Note on the life and works of M. l'Abbè Provancher, by Julie Julien, was read :—Mr. l'Abbè Leon Provancher was born in Becancourt, near Three Rivers, on the 10th of March, 1820. He was ordained priest at Quebec on the 12th of September, 1844. Since 1862 he has devoted all his time to the study of natural history. He began then the publication of the "Naturaliste Canadien." His principal works are : "Traite èlèmentaire de Botanique," illustrated, 1858 ; "Flore du Canada," 1862 ; Le "Verger," "Potager," et le "Parterre," 1874 ; Faune Entomologique du Canada, Les Coleoptaires, 1877, avec supplements, Ortopteres, Neuroptères, Hymenoptères, 1883 ; Additions aux Hymenoptères, 1889; Les Hémiptères, 1889. He also published accounts of his travels : "De Quebec à Jerusalem," 1884; "Une Excursion aux pays Tropicaux," "Abrégé de l'Histoire du Canada," 1884 ; "Les Mollusques de la Province de Quebec," "Les Univalves." He began writing a study on the "Culture of Ornamental Plants," but unfortunately could not terminate his work before his death, that occurred on the 23rd March, 1892, deeply regretted by his sorrowful relatives and by all the lovers of natural history.

Professor Coleman read a paper on "New Trails in the Rockies from the Saskatchewan to the Arthabasca."

Dr. Sandford Fleming read a paper on "The Abolition of the Astronomical Day," also a paper on "A Memorable Epoch in Canadian History," also a paper on "Canadian Historical Pictures."

The following resolutions were passed :—

That the Canadian Institute heartily welcomes and accepts the proffered aid of the Astronomical and Physical Society of Toronto in its work of Time Reform, and requests the Council of the Institute to appoint a committee of three to co-operate with a similar committee of the Astronomical and Physical Society in bringing about the assimilation of astronomical and civil time. The Canadian Institute suggests that the two committees act as a joint committee with equal voting power, and further, that Sandford Fleming, Esq., C.M.G., LL.D., etc., who is a member of both societies, be chairman of the joint committee, with power to decide any difference of opinion which may arise.

That Dr. Fleming's paper on Canadian Historical Pictures be referred to a committee consisting of Messrs. Howland, Forster, Sherwood, Tully and Hamilton, to consider and report to the Council at its next meeting

some plan whereby the proposals mentioned in the paper may be accomplished. That it be an instruction to the Committee on Canadian Historical Pictures to consider the best manner of raising means to obtain a historical painting to commemorate the arrival of Sir Alexander MacKenzie on the Pacific Coast on July 22nd, 1793, after his memorable discoveries and the completion of the first transcontinental journey by any civilized man, and it be suggested to the committee that artists should be invited to submit proposals to the Institute on the 22nd July next.

FOURTEENTH MEETING.

Fourteenth Meeting, 18th February, 1893, the President in the chair.

An interim report from the Committee on Historical Pictures was read.

Donations and Exchanges, 56.

G. M. M. Martin was elected a member.

Mr. L. J. Clark read a paper on "The Breaking of the Conduit," illustrated by drawings on the blackboard.

FIFTEENTH MEETING.

Fifteenth Meeting, 25th February, 1893, the President in the chair.

Donations and Exchanges, 77.

T. Mower Martin, R.C.A., was elected a member.

A paper by Capt. Ernest Cruikshank was read on "Traders and Trade Routes in Canada, 1760-1800" (second paper).

SIXTEENTH MEETING.

Sixteenth Meeting, 4th March, 1893, the President in the chair.

Donations and Exchanges, 70.

E. Herbert Adams, M.D., was elected a member.

The following resolutions were passed :—

That clause 2 of the first section of the by-laws be hereby suspended, and that the Council be requested forthwith to make a selection of ladies

and gentlemen whose co-operation in the work of the Institute is desirable, and to send to them a circular letter explaining its aims and needs, following the same by personal application, paying for such services in the premises according to such a scale as they may see fit, and commissioning such persons as they may appoint to receive the fees and such donations for specific purposes as may be given; the work to be continuously followed up, and reports of progress to be made as often as possible.

That the thanks of the Institute be given to Lt.-Col. F. C. Denison, M. P., for the interest he has taken and the work he has achieved in moving the government to take steps to protect and preserve the old French stone magazine in Fort George, Niagara.

Mr. Andrew Elvins read a paper on "The Satellites of Jupiter."

Dr. A. M. Rosebrugh read a paper on "The Child Problem."

SEVENTEENTH MEETING.

Seventeenth Meeting, 11th March, 1893, the President in the chair.

Donations and Exchanges, 32.

Hon. G. W. Ross was elected an honorary member, Dr. Eden Walker, of New Westminster, B.C., a corresponding member for a period of three years, and Mr. W. Spry, C.E., P.L.S., of Toronto, an associate member.

The Secretary was instructed to send a congratulatory letter to the Lundy's Lane Historical Society on the recovery of the parish records of the parish of Welland from 1820 to 1835, and to ask for a short description of their contents, and where and how the records were found.

Mr. J. W. L. Forster read a paper on "Artists—their Educational Privileges and Professional Rights." He directed attention to the good fortune of the artisan and agriculturist, who each enjoyed technical and scientific education, to the culture given the architect, engineer, solicitor, and practitioner, and asked:—Shall the skilful and distinguished practice of art forever limit itself to the studio and the field? Shall it not allow itself, shall it not prepare itself, to mingle and associate with scholarship in a congenial and eminent fellowship? In close kinship to this question was another:—Shall not art in its approved pursuit have an acknowledged place amongst the learned and honourable professions? These questions formed the text, so to speak, of his paper. He pleaded in the interest of the latter question reliable expert evidence in courts of law,

and the saving of great cost to litigants and to the country, etc. The greater part of the paper was devoted to the educational question, in discussing which he quoted what is being done in France and Belgium, where the machinery of governments and the faculties of the universities are utilized to carry forward broad and thorough systems of instruction, and where examinations are so directed as to give artists an intellectual standing appropriate with the place art holds amongst the liberal professions. Neither the intention nor the effect has ever been to draw away the mind of the artist from his chalk and models; but by so enriching his mind with the stores of information that apply directly to his work, by uncovering to him the wells of scientific truth that will correct his judgment and give permanence to his work, by unrolling the scrolls of history, and by teaching to him the ethics of art equip him for high achievement and honourable renown. The list of options for college and university course for artists was then sketched. And the course for fine art degrees in several American universities was given as taking up only a small portion of work that was of real value, and for which the machinery of our university is already fairly well adjusted Ontario does not generally wait for her neighbours to lead, especially in the field of education.

EIGHTEENTH MEETING.

Eighteenth Meeting, 18th March, 1893, the President in the chair.

Donations and Exchanges, 80.

A letter was read from Rev. Canon Bull, President of the Lundy's Lane Historical Society, giving an interesting account of the recent discovery of an old church register at Chippewa, together with many important papers. The reverend gentleman is now endeavouring to make a duplicate of this register, and also to write out the papers in order. An important marriage license, with clergyman's endorsation of Nov. 28, 1839, has been found, of which there was no entry in the parish register. This document appears to be of very great value, as it supplies evidence for which long enquiry had been made.

A paper by Dr. Sandford Fleming on "Early Ocean Steamships" was read. It confuted the statements made by Professor Watkins, in the report of the United States National Museums for 1890, in regard to the claims of the Savannah to be the first steamship to cross the Atlantic.

Mr. Alan Macdougall read a paper on "Electro-Horticulture." He stated he had watched shade trees in a number of streets in early spring

and in the fall, and could find no forcing effect from the electric light Trees away from the lights seemed earlier: north and south streets were earlier than those running east and west. The subject had been under study at Cornell University for the past three years. The reports say the naked light when placed near plants injures them; a clear glass, even a pane of glass, is beneficial, and opal globes give best results. Plants which are much injured under a naked light may be benefited under a protected one. As a rule, plants under the electric light in forcing houses mature earlier than in the dark house. Lettuce can be hastened from seven to ten days by only five hours of light per night. Radishes, beets, spinach, cauliflower are slightly benefited. Certain kinds of flowers are also benefited, and plants which are benefited seem to grow more rapidly during the customary period. The researches point to a likelihood of electric light being advantageous for forcing plants for the market.

Mr. D. W. Beadle, B.A., LL.B., read a paper on "Danger menacing our Pear Orchards from an invasion of Psylla Pyricola."

NINETEENTH MEETING.

Nineteenth Meeting, 25th March, 1893, the President in the chair.

Donations and Exchanges, 46.

Messrs. J. G. Ridout and E. B. Lefroy were appointed auditors.

Mr. William Houston, M.A., read a paper on "The Laurentian Region of Ontario." After discussing the extent of the region, its physical character, geological and geographical features, and resources, he showed its unsuitability for agricultural purposes, and advocated setting it aside as a great national park.

He concluded by making the following suggestions :—

1. All free granting of land within that region should be at once and forever abandoned.

2. Some policy should be adopted with a view to securing the reinvestment of abandoned lands in the Crown.

3. So soon as they are reacquired steps should be taken to have them reforested.

4. Additional measures should be taken to secure the preservation of game.

5. The Legislature should exercise some control over the waste caused by destructive lumbering operations.

6. Access to the interior of the region should be facilitated.

TWENTIETH MEETING.

Twentieth Meeting, 1st April, 1893, the President in the chair.

Donations and Exchanges, 71.

Dr. Henry Hunt was elected a member.

A paper by Rev. Dr. MacNish was read on "The present aspect of the Ossianic Controversy."

The following resolution was passed on motion of Mr. W. Hamilton Merritt, seconded by Mr. T. R. Clougher :—

"That one of the greatest benefits to commercial progress has been attained by the advances made in the manufacture of steel, especially by the Bessemer process, and that in Britain, the United States, and other countries where smelting works are in operation, they have had direct influence on the prosperity of the country ; Be it resolved,—that the attention of the Provincial Government be directed to the advantages to accrue to the province by the construction of smelting works for our iron ores, and that a committee be appointed to wait upon the Government and request it to consider such means as in their opinion will aid in developing our iron deposits by the erection of smelting works."

Prof. Coleman and Messrs. Merritt, Clougher and Bain were named a committee in accordance with the resolution.

TWENTY-FIRST MEETING.

Twenty-first Meeting, 8th April, 1893, the President in the chair.

Donations and Exchanges, 55.

Messrs. Allan Cassels, Thomas W. Gibson, H. Maughan, Robert Percy Vincent, and A. L. Hoyles were elected members.

Mr. D. W. Beadle, B.A., LL.B., read a paper entitled "Danger of Introducing a very serious Pest destructive of our Peach Orchards."

Mr. Andrew Elvins read a paper on the Satellites of Jupiter, supplementary to one previously read on the same subject. He called attention to the fact that the period of the revolution of each of the satellites was double that of the next interior one, in accordance with Kepler's law. Thus, the satellite farthest from the planet is about 352 hours, the next nearer the planet is 176 hours, the next 88, and the next is 44, while the newly-discovered satellite revolved in 11 hours, or one-fourth that of the next exterior satellite. This discrepancy rendered it probable

that a satellite existed between the two latter, which revolved round its primary in about 22 hours. Mr. Elvins recommended astronomers to carefully search this space, as it was likely their labours would be rewarded by the discovery of a sixth satellite, revolving in accordance with Kepler's law.

Mr. Elvins closed thus:—"Reasoning in this manner, I ventured to suggest that it would be well to watch Jupiter closely during the opposition of 1892. My paper was read in May, 1891, and published in February, 1892, in the "Transactions of the Astronomical and Physical Society" of Toronto, and I wrote our local observers to look for satellites, or rings, which would doubtless be very faint, but would possibly be seen. I wrote Prof. Barnard, among others, and this reply, which I lay on the table, shows he received it. Whether that letter stimulated him to search for satellites or not, he has not stated. One thing is certain, he has made a diligent search and a fifth satellite being discovered has rewarded his pains. The French Academy of Science has tendered Prof. Barnard a double prize, a token of merit which he richly deserves. But had he mentioned the fact that I had suggested the possibility of the existence of a new satellite, the lustre of his discovery would not have been dimmed, and he would have been doing justice to one who has been a lover of the stars through a life which is now rapidly drawing to a close."

TWENTY-SECOND MEETING.

Twenty-second Meeting, 15th April, 1893, the President in the chair.

Donations and Exchanges, 85.

Messrs. C. P. Smith, Clarence E. Spink and G. K. Powell were elected members.

Prof. A. B. Macallum read a paper on "Archic Life."

TWENTY-THIRD MEETING.

Twenty-third Meeting, 22nd April, 1893, the President in the chair.

Donations and Exchanges, 57.

A circular from the Royal Society of Canada, transmitting copies of a schedule for the recording of observations in Natural History and Meteorology was referred to the Biological Section.

Mr. J. J. Foy and Rev. J. J. Hare, Ph.D., were elected members.

Mr. Alan Macdougall read a paper on "Road Improvement."

TWENTY-FOURTH MEETING.

Twenty-fourth Meeting, 29th April, 1893, the President in the chair.

Donations and Exchanges, 64.

Nominations for officers for the ensuing year were made.

The following gentlemen were elected members:—Messrs. E. B. Osler, Paul Campbell, George Williams, Charles P. Sparling, S. N. Samuelson and Oliver Spanner.

On motion by Mr. G. G. Pursey, seconded by Mr. C. Armstrong, it was resolved that the Public school teachers be requested to impress on their pupils, when they are gathering wild flowers, to be careful to pluck the flowers only and leave the roots undisturbed, and that the press be requested to give this resolution wide circulation.

Mr. Arthur Harvey read a paper entitled "The Outlook from Mount McKay," Mount McKay being one of the great hills which meet the view as the traveller enters Thunder Bay, on Lake Superior. The features of the territory overlooked by the mountain, the geography, topography, geology, were described and discussed by Mr. Harvey, and some practical suggestions were thrown out as to the development of the rich resources of the country.

FORTY-FOURTH ANNUAL MEETING.

The Forty-Fourth Annual Meeting was held on 6th May, 1893, the President in the chair.

Donations and Exchanges, 60.

The following were elected members:—Mr. Frederick Wyld, Mr. Thomas McCraken, Mr. John Chambers, Mrs. Alexander Cameron, Miss Bertha M. Shoults, and Miss Lilian C. Harrington.

President Harvey addressed the Secretary, Mr. Alan Macdougall, as follows:—"Some members of the Canadian Institute who admire the urbanity and tact with which you discharge the duties of the secretary-hip desire to present you with a token of their appreciation of your services and of their high personal regard. It is my pleasing duty to carry out their wish by handing you, in the name of the Institute, a silver inkstand with a short inscription." Mr. Macdougall replied.

The Forty-fourth Annual Report was read and adopted.

Professor Mavor was empowered to act as delegate from the Canadian Institute to the next meeting of the British Association for the Advancement of Science.

The officers of the Institute for the ensuing year were elected as follows:—President, Prof. R. Ramsay Wright, M.A., B.Sc.; First Vice-President, Mr. J. C. Hamilton, LL.B.; Second Vice-President, Mr. B. E. Walker; Secretary, Mr. Alan Macdougall, C.E.; Treasurer, Mr. James Bain, Jr.; Librarian, Mr. D. R. Keys, M.A.; Curator, Mr. David Boyle, Ph.B.; Editor, Mr. George Kennedy, M.A., LL.D.; Members of Council—Mr. J. Maughan, chairman of the Biological Section; Prof. Coleman, Ph.D., chairman of the Geological and Mining Section; W. Canniff, M.D, chairman of the Historical Section; and Mr. O. A. Howland, Mr. Arthur Harvey, Mr. Levi J. Clark.

A vote of thanks was tendered to the retiring President, Mr. Arthur Harvey, for his indefatigable labours in the service of the Institute during his term of office; also to the several officers for the faithful and efficient discharge of their duties during the past year. It was then resolved that the thanks of the Institute be tendered to the city press for their excellent reports of the proceedings of the Institute and its sections, and that a copy of this resolution be sent to each of the papers.

FORTY-FOURTH ANNUAL REPORT.

The Council of the Canadian Institute has the honour to lay before its members its Forty-fourth Annual Report.

The session which has closed compares favourably with past years in the number of papers read, the attendance at the meetings and the interest taken by members in the work of the Institute.

Twenty-four ordinary meetings were held, at which thirty-four papers were read. The work of the several sections was well maintained; the natural history or biological section, with its sub-sections, held twenty-seven meetings; the historical section six, and the geological and mining, six meetings.

The membership has increased by the election of twenty-five members, sixteen associate members and three juniors.

One honourary member and four corresponding members have been elected, the periods of election of the latter ranging from three to five years.

The Institute announces with much regret the death of several valued members.

Sir Daniel Wilson, LL.D., F.R.S.E., etc., President of Toronto University, an honorary member, during his long and valuable life, rendered marked assistance to the Institute, and occupied the Presidential chair in 1859-60, 1860-61, and 1878-80.

Nelson G. Bigelow, Q.C., LL.D., M.P.P., a life member, did not take a great interest in the work of the Institute in later years; his death was sudden at the end.

His Honour Sir Alexander Campbell, K.C.M.G., Lieutenant-Governor of the Province, was prevented by his official position and duties from taking a very active part in our work.

D. A. O'Sullivan, LL.D., was a frequent contributor to our meetings; his health of late years prevented his attending very regularly.

The re-arrangement of the rooms in the building, which has recently been effected, has proved very successful. The library, which was formerly hardly ever used, is now the general reading room; the spacious apartment affords ample accommodation for the comfort of the members. The acquisition of the reading room on the ground floor has enabled the natural history section to bring its collections together in a very convenient form for reference and study.

The conditions for the competition for papers on Electoral Representation and the Rectification of Parliament have been widely distributed. The competition closes on the 1st of July.

The centennial celebration of the formation of the Province of Upper Canada, and the institution of parliamentary government, was celebrated with great enthusiasm at Niagara on the 16th of July. This was followed by fitting ceremonies in Toronto on the 17th September, the centennial anniversary of the meeting of the first parliament, and the hundredth parliament was opened on the 5th of April with the state and ceremony which befitted the important occasion. The Institute was well represented on both occasions.

The report of the Provincial Commission on the Algonquin Park for the preservation of wild animals and the forest has been issued, and a bill to establish the park has been introduced into the Legislature by the Hon. Commissioner of Crown Lands. It is gratifying to find in this report the completed design which emanated from the Institute, and in which the Institute has never failed to take a deep interest.

The Council has pleasure in announcing that through the efforts of one of our city members, Lt.-Col. F. C. Denison, C.M.G., M.P., and the Hon. Senator Lougheed, the grounds and ruins of old Fort George at Niagara are to be preserved and cared for by the Government.

Action was taken by the Council in accordance with resolutions passed at the meetings, to secure some commemoration of the crossing of the Atlantic by the first steamer, in 1833. Dr. Sandford Fleming has proved conclusively that the Canadian steamer Royal William was the first to steam all the way across. The Government will probably erect a tablet to commemorate the event. A model of the vessel is being exhibited at the World's Columbian Exposition, and public documents relating to the crossing distributed to the public. The log of the Savannah, which has recently been published, proves that she steamed only in calm weather, and out of 29 days, 11 hours at sea, she steamed altogether only 3 days, 8 hours.

A joint committee of the Institute and Astronomical and Physica Society has prepared a circular to be sent to all the observatories and astronomers asking their opinions regarding a change in time reckoning, whereby the astronomical and civil day shall begin at mean midnight, and suggesting that the change shall be inaugurated in 1901.

The Institute was requested by the several provincial universities and McGill, Montreal, to send an invitation to the British Association for the Advancement of Science, to hold its meeting in 1895 in Toronto. The proposal was favourably received by the Provincial Government; the Dominion Government did not entertain the proposal on the basis set forth in our petition; negotiations are still pending, which it is hoped may terminate favourably to the prayer of the Institute, and result in the desired grant being made.

The appeal of the Institute to leading citizens for aid, and an increased membership has been widely disseminated; it is being followed up by a personal presentation of the claims of the Institute.

The Institute again acknowledges its indebtedness to the generosity of the Government in enabling it to continue its archæological work.

The report of the Curator will be found as full as ever of interesting matter. The report is being printed as an appendix to the annual report of the Hon. Minister of Education.

The thanks of the Institute are due and are tendered to Messrs. Cockburn, Denison, and Coatsworth, M. P.'s for the City of Toronto, for many services rendered during the last session; and to the CITY PRESS for full reports of our meetings.

The Treasurer's accounts have been audited and found correct. They will be found in Appendix I.

The report of the Librarian is given in full in Appendix III. It will be seen that the additions to the library continue to be numerous and valuable.

The reports of the Sections are given in the Appendices IV., V. and VI.

The Council acknowledges with pleasure the services rendered to the Institute by Mr. R. W. Young, M.A., Assistant Secretary.

All of which is respectfully submitted.

ARTHUR HARVEY,
President.

ALAN MACDOUGALL,
Secretary.

TORONTO, 29th April, 1893.

N.B.—The Appendices have been printed in full as a supplement to the Annual Report of the Hon. the Minister of Education.

SOCIAL ORGANIZATION OF THE BLACKFOOT INDIANS.

By Rev. John Maclean, M.A., Ph.D.

(*Read 19th November, 1892.*)

The Blackfoot Confederacy is named by the three tribes comprising it, Sâketûpïks, *the People of the Plains*, and Netsepoye, *the People that Speak the Same Language.* It is the custom amongst the mounted police and settlers in Alberta, where the three tribes are located, to speak of the Confederacy as simply the Blackfeet, and to name each gens after the chief of the gens. The natives follow their own customs, calling each gens by its own distinctive name, recognizing the fact that the chiefs may be removed by death and other causes, which would change the names; but by following their own native method, the names of the gentes are always retained. The Blood Indians are called *Kaina*, a name not definitely understood, but from all I could gather from the old men in the camps, it is derived from *Aikaie*, *an old robe*, and the application of this name to the tribe means that the people at one period in their history wore old robes, which were well-nigh useless, and it was at that time and because of that circumstance that they were thus named. This tribe is also named *Aapaitûpĭ*, Blood people, and Sûmûkegtûqkûnema, and Sûmûkena, which mean that these people had large knives with which they fought.

The Piegan tribe is named in the Blackfoot tongue Pikûnĭ, singular Pikûnĭkwan, which is derived from Apikûni, meaning a half-dressed hide of the buffalo. The Indians say that there was a period in the history of the Confederacy when the Piegans were compelled through poverty to dress themselves in buffalo robes, which were badly tanned and almost worthless as an article of clothing.

The Blackfoot tribe is called Siksikauo, meaning Blackfeet. The singular number has always the personal termination *kwân*, thus Siksĭkaikwân = a Blackfoot Indian. It is a compound word made from the combination of Siksĭnûm, Black, and Oqkûts, his foot. We have the adjectival particle Siksĭ, the noun particles *kai* and *kaw*, and the personal termination *kwan*, which completes the word. There are two meanings given to this name, that is, as to its origin. The Indians have told me

repeatedly that the name referred to a period when the prairie was burned, leaving the ground black and dry. As the Indians travelled over the prairie their moccasins became black and they were named by the tribes adjacent Blackfeet. Jerry Potts, Government guide and interpreter, who is a reliable authority on questions of this nature, says that there is another account of the origin of the name, and he is strongly inclined to give it the preference. This tribe lived for some time in the northern part of the country, where the mud was soft and of a dark colour, and at that time, and from that cause, their moccasins became dark, and consequently they received the name of Blackfeet, which now they bear. This name has also been applied to the Confederacy by some as a distinctive name.

Many years ago the Blackfeet, Crees, Sarcees and Gros Ventres were one people, and lived peaceably together in the Red River country. Together these tribes travelled westward and settled near a large lake surrounded by woods in the country of the Saskatchewan. The present Provisional District of Alberta was at that time peopled by the Flatheads, Shoshonees, Crows, and other Indian tribes. The first white men whom the Indians met were the traders, who came to barter goods for furs and hides. From these traders the members of the Blackfoot Confederacy received guns, and they drove the Flatheads and Shoshonees across the mountains and the Crow Indians into the region of the Yellowstone. The Blackfeet do not now know the exact location of the lake where they settled many years ago in the north. During the period when the Crees and Blackfeet were one people they were travelling southward when a quarrel arose about a dog. Dogs were very scarce at that time, and hence the quarrel became an important one, involving the tribes. So serious did the affray become, and the hostility manifested so very great, that the Crees and Blackfeet separated and have remained independent until the present day. A long period before the advent of any white settlers the Blackfeet travelled as far southward as Salt Lake, hunting wild horses and buffalo, and they went eastward for trading purposes to a trading post at Qu'Appelle, in the provisional district of Assiniboia.

The three tribes, Blackfeet, Blood and Piegan, which constitute the Blackfoot Confederacy, are three distinct tribes, having no common council, or bond of unity, except the ties of a common parentage, language, customs, traditions and interests. I have never learned that any common council consisting of delegates from each of the tribes has ever been held since they separated. Whenever any important matter was under consideration which affected the Confederacy, a young man,

commonly called "a runner," was sent to carry the news, or a chief would be delegated as messenger, but generally one of the servants of the head chief. If it were a grave matter, the head chief of the tribe would undertake the mission, and upon his arrival would be treated in an honourable manner, as became such an august personage. The head chief and the minor chiefs of the tribe would then assemble and the matter would be brought before them by their illustrious visitor and discussed.

The state life in each of the tribes is the same. There is not a definite number of gentes in each tribe. There is not a common taboo for the gentes. Some of the gentes have a taboo, but not all. There is not one common to all, each gens which has a taboo has a distinctive one. There is one, however, which partakes of the nature of a common taboo, which relates to the Naâye gens. This gens will partake of fish, but none other of the gentes will partake of them. Sometimes a single individual will eat a piece of flesh of some bird or animal, and upon learning what it is will spit it out, exclaiming, "That is against my medicine."

There is one common ancestor for all the Indian tribes. He is not an ancestor in the proper sense, but a secondary creator. He is called *Napioa, the Old Man.* He is not the creator of the gens, or tribe, but of the whole Indian race.

Individuals belonging to one gens can marry into any other gens. The wife goes with her husband to his gens and lives there with him. If he dies, the widow can remain in her husband's gens or return to her own.

The Blackfoot Confederacy have not any adoption ceremony. I have seen women belonging to the Cree and Kooteenay tribes, and men who in their youth were Ojibways and Crees, and these were treated as members of the Blackfoot Confederacy, no distinction being made between them. None of these had ever gone through any adoption ceremony. In the matter of caring for orphans, they are looked after by the nearest relatives, and when these fail they are provided for by the tribe. They are never allowed to be in want, for the people say as they are of the same flesh and blood they must be cared for by the people.

There are several state classes, the most important being the chiefs. They are called *Ninaks, fathers, chiefs.* Of these there are three kinds, namely, two principal chiefs, the peace or civil chief, and the war chief, and the minor chiefs. The two principal chiefs have each one gens, and are also the supreme heads of the tribe. Each minor chief has a

gens, whose interests he attends to at the meetings of the council. Each member of the gens is specially protected by the minor chief. When Crowfoot, the principal chief of the Blackfoot tribe, was alive, the people belonging to the three tribes spoke respectfully of him, and had there been a supreme head for the Confederacy there is no doubt but that he would have been elected to that position, but whenever he visited the Blood Indians he did not preside at the council, but was treated as an august member of the Confederacy. Questions of a federal nature were submitted to him, as to the supreme heads of the other tribes. The Indians are a people jealous of their rights, and no one, no matter how noble his character and great his position, would accept of honours or usurp authority.

The war chief is the head warrior of his tribe. In the ancient days the mode of election was conducted in the following manner: When a warrior had shown himself to be especially brave, giving evidence of great courage, good judgment and honesty, and had won the esteem and affection of his tribe, the camp-criers, who were invariably old men, went among the lodges visiting the people and extolling the virtues of their candidate. By this means all the people soon learned the name of the candidate and his claims for the position. This action of the criers was kept up until the sun dance ceremonies were in full operation, and then the warriors mentioned the name of the man desired for the position. They expressed their wish for the election of their candidate. The person designated for the position was then placed in the centre of the medicine lodge, and the people declared him elected as war chief of the tribe by assenting with their voices. A rival candidate was easily thrust aside through the influence of the camp-criers. The criers were skilful in all matters affecting an election, so that it was a settled question who was to be the war chief before the sun dance began.

The duties of the war chief were to make arrangements for war, and to lead the warriors to battle. Virtually, he was supreme in the camp during a period of war. War could not be resolved upon without the concurrence of the council. At this council the peace chief presided. Small parties might go out to make raids upon their enemies, for the purpose of stealing horses, but these were of such minor importance that nothing was thought of them. When, however, the war was of a tribal character the council must decide, and when the decision was favourable to war, the war chief had almost, if not altogether, the sole control of the camp. At a council meeting presided over, some years ago, by Red Crow, the peace chief of the Blood Indians, to consider the question of going to war against the Sioux Indians, who were supposed to be within the territory of the Blackfeet, and therefore guilty of trespassing, it was decided to go

to war. *Natosonesta, Medicine Calf*, one of the most influential chiefs of the tribe, was not present at the council, and it was at last agreed to adjourn, to meet and hear Medicine Calf's opinion. The council met, and the chief was present, when the decision of the council was stated to him. The chief listened intently, and then asked,

"Where are the Sioux?"

"In our territory," was the reply.

"What harm have they done?" he enquired.

"They have not done any," was the answer.

Curtly then he spoke to the council: "I fight against my enemies!"

This ended the council meeting and the Blood Indians did not go to war.

The war chief was in the early days elected for five years, but now they retain their position for life, or until they are unfit to perform their duties. Since the institution of reservations, and the supervision of the Government, the chiefs are retained in their positions during good behaviour, or until death or incompetency removes them. The present war chief of the Blood Indians is *Manĭstokos, the Father of Many Children, alias* White Calf.

The peace chief is elected similarly to the war chief. His duties are to keep order in the camp, and to regulate all matters in the camp. He is the chief civil officer, and is supreme except in times of war. When the tribe is on the march he gives orders where the lodges are to be pitched collectively. Whenever anything happens as they are travelling the soldiers call a meeting in the chief's lodge, over which the chief presides. The question is discussed, and a decision arrived at, whereupon the soldiers receive their instructions from the chief and hasten speedily to obey his command. All petty grievances and quarrels are brought before him, and he gives his advice as to the manner of settlement. Grave questions affecting the tribe, and not of an individual character, are reserved for the council; but all minor disputes arising from theft, offences against the person, and questions of a similar nature are settled by the chief as judge, magistrate, adviser and father to his people. The peace chief must be therefore stern in giving his decrees, wise and sympathetic in counsel, dignified in his dealings and impartial in his judgments—a judge on the bench and a father at the lodge-fires of his people. At the camp-fire he is stern and dignified, at the lodge-fire sympathetic and humble. *Mikasto, Red Crow*, is the peace chief of the Blood Indians.

Besides the minor chiefs, one of whom presides over each gens, and the sum of them constitute the council, there is a class of men known as soldiers, warriors, braves or policemen. All the young men in the tribes aspire to the position. When a young man is anxious to become a warrior he presents himself to the war chief, who examines him, and if he finds him a suitable person he is admitted, if not, he is rejected. Sometimes a young man performs a brave deed which raises him so much in the esteem of the people that he is honoured. Without any application from him, when a brave act has been performed, he is admitted as a warrior. Promotion lies with the war chief, who raises his warriors to their respective grades, according to their ability and the display of their bravery. No man can be elevated who does not perform a warlike deed. The soldiers act as warriors in times of war, and during the periods of peace they are the policemen of the camps. They are therefore under the rule of the war chief in troublesome days, but in the peaceful days they are under the guidance of the peace chief. They keep order in the camp under his instructions. They are related to the chiefs as messengers. The writer remembers a detachment of black soldiers coming to Medicine Calf's lodge late one evening and taking away the wife of *Dog-Running-Back*. She had been married according to the native custom to an old man, but subsequently a young man named *Dog-Running-Back*, son of *Medicine-Calf*, had won her affections, and she escaped with him. It was an elopement, but these were of such frequent occurrence that the Indians spoke of them as "*stealing a wife*." The old man learned of the return to the camp of the guilty pair and he called in the aid of *Mikasto*, the peace chief, who sent the black warriors to arrest the woman. It was at midnight when they came to the lodge. They allowed her to ride upon her own horse behind them. As they rode through the bush she slipped off her horse, and under the cover of the darkness escaped. The matter was ultimately settled to the satisfaction of all parties concerned.

Jerry Potts told the writer that when he was war chief amongst the Piegans, *Running Wolf*, a Piegan chief, was guilty of a misdemeanor and was summarily treated, according to the laws of the tribe. The peace chief had given orders one evening, as they were on the march, that no one was to advance on the following day, nor at any time, without instructions. The war chief had under him fifty men, and as he was keeping guard he saw an object ahead of the camp, at a long distance. Jerry and his fifty men went out to ascertain what the object was, when they were surprised to see *Running Wolf* standing beside his horse, and upon the ground a dead buffalo. When asked the reason for disobeying orders he pleaded in extenuation that he only went out to get

this buffalo, as he had seen it; besides, this law did not apply to him, as he was a chief. The warriors looked at their leader, and at once he gave orders that the law must be obeyed by everyone, and anyone breaking the law must be punished. The warriors took *Running-Wolf*, stripped him naked, took away his horse, and made him walk to camp, a distance of seven miles. After some consultation in the camp his horse was given back to him, but they tore his blanket in shreds, and kept all the rest of his property.

There are several grades of warriors among the tribes. The writer found the following grades among the Blood Indians :—

Mokaikĭnûkĭ, the Brave Warriors: Heavy Shield is head of this band of soldiers.

Mastoqpatûpĭ, the Crow Warriors.

Imĭtaiĭnakĭ, the Dog Warriors.

Etsĭnakĭ, the Horn Warriors.

Kaispa, the Sioux Warriors.

Siksĭnaksĭ, the Black Warriors.

Potaina, better known as "Joe Healey," told me that the men must be thirty-four or thirty-five years of age before they are admitted into the ranks of the black soldiers. The highest position obtainable by a warrior is after having passed through all the military grades he receives the full rank of warrior.

The following gentes are found among the Blood Indians :—

1. *Siksĭnokaia, the Black Elk People.* This is the name of the gentes whose chiefs are Eagle Head and Blackfoot Old Woman. The legend says that a child was born very dark, when he became a man he wore an elk skin. He became a chief and his gens was named the Black Elk people.

2. *Inepoia.* This is the name of two gentes, Bull Back Fat's and White Calf's. There are two or three families in One Spot's gens who belong to the *Inepoia* gens. The legend says that a long time ago their ancestors walked a great distance and because of the journey and the heat they perspired freely, and then they were called *Inepoia, the Sweating People.*

3. *Otekûksĭn, the Short People.* This is another name for Bull Back Fat's gens.

4. *Apikaks, the People with the Sore Feet.* This is the name of the gens, of which Strangling Wolf is the chief.

5. *Mamyauye. Red Crow, Mikasto*, who is peace chief of the Blood Indians, is chief of the gens named above. This chief is also called Onĭstaĭâkapĭ. The gens has two names, and the legends state that there was a period when the tribe was absent hunting buffalo, and the members of this gens remained at the mountains, being unable on account of sickness to accompany the tribe. They had no buffalo meat, and they fished in the mountain streams, catching large quantities of fish, which they ate. They were therefore called *Mamyauye, the Fish Eaters.*

At another period in their history the brother of Red Crow was peace chief and also chief of this gens. During this time a friend gave unto him a revolver with six chambers, a rare thing for an Indian to possess at that time, and from this circumstance the gens was named *Naâye, Six Mouths*, from the six chambers of the revolver.

6. *Piksĭstaia, the Goose People.* This is the name of the gens of which Sakoĭstamĭk is the chief.

7. *Netaitskaia, the Bad People, Enemies.* Two gentes bear this name, one governed by *Heavy Shield* and the other by *Eagle Rib, Petoqpekĭs.*

8. *Imûksenĭa, the Vexed People*, from *Maksenĭo—he is cross, vexed, angry.* Low Horn is the chief, and the legend says that many winters ago the chief of this gens died, and the people being unable to go out hunting the buffalo, because of the mourning time and there being no one to lead them, they were vexed.

9. *Ipûkĭmûnoawa, the People with the Skinned Legs.* This is the name of the gens of which *Manĭstokos, Father of Many Children*, better known amongst the white people as White Calf, the war chief of the Bloods, is the chief. *Inepoia* is another name for this gens.

There are other legends connected with the gentes, but some of them are vulgar in their origin. Some of them seem to partake of the nature of nicknames. So far as I am able to judge, they must be accounted for in the same manner as the giving of names unto individuals. Generally each person has two names, a good one bestowed upon him for some brave action or worthy characteristic, and a bad one given because of contempt, for having been guilty of a foul deed, or it may arise from a mean disposition. Another class of names is given in a mood of playfulness to mark some humorous trait in the individual. The reason, then, why the Indians will never tell their names when asked arises from the fact that in pronouncing their names they are telling their characters. Modesty hinders the possessor from mentioning the honourable name and

shame from telling the comtemptuous one. The names of the gentes appear to be given in accordance with this custom of bestowing personal names.

Some of the aged men informed the writer that in the early history of the Confederacy some of the Indians were held in slavery, but they have held no slaves during the lifetime of any of the people now living. There are some old men, however, who act in the capacity of servants to some of the chiefs. I have never known any of these, although I have seen young men acting as messengers. Some of them seemed to hold an official position, for they were not related to the peace chief by marriage, although they belonged to the same gens. They undertook long journeys when ordered to do so, interpreted when they had the ability, and received no compensation for their work.

Since the making of the treaty the mode of forming a gens and of electing chiefs has been modified. An influential Indian may secure a large number of adherents through his boldness in proposing some popular measure, first by suggesting it, and by secret and incessant agitation keeping it before the minds of the people. His name will be brought forward at some interview with prominent Government officials after the way has been cleared by securing strong support from the people, a promise of investigation will be given, and the Indian council having nominated him, the Government will finally sanction his election, if that is in the interests of the tribe.

When the tribe is on the march there is a regular order of camping. This is a very simple arrangement, and there is not the elaborate and definite method of division which exists among the Dakotahs. When the people reach the place appointed for camping, the peace chief has his lodge pitched upon the westward side, he is surrounded by the leading members of his gens, and then eastward the chiefs have their lodges pitched at a sufficient distance from each other to allow the members of their respective gentes to surround them. The sacred tents are guarded by the soldiers. This latter arrangement has not taken place for several years; as I have never seen any of these sacred lodges, but I have been informed by the aged chiefs that such were in existence in the early years.

Several sacred pipes belonged to the Blood tribe, some of which are still in possession of the chiefs. The tribal pipe had a large stone head with figures of animals cut before and behind, the stem was about three feet long, made of wood, carved and painted, from which fringes of ermine skins were appended. A woman was detailed to look after it. In travelling, this woman carried it upon a horse, upon which nothing else

was allowed to be borne. After reaching the camp, it was taken into the lodge, being carried around on the right hand side of the lodge, never deposited in its place from the left hand side. Besides this pipe, of which there was one for each camp, there were sacred medicine pipes possessing great healing powers, of which we shall speak when we treat of the medical priesthood.

The Blood Indian Reservation is the largest Indian reserve in the Dominion. It is located between the Belly and St. Mary's rivers near Macleod, Provisional District of Alberta, the southern boundary of the reserve being about fourteen miles from the international boundary line. It is approximately sixty miles long by eighteen miles wide, and contains four hundred and seventeen thousand acres, or five hundred and forty-seven square miles. It was surveyed in August, 1883, in accordance with the amended treaty of July 2nd, 1883, by J. C. Nelson, Dominion Land Surveyor. The Indians have a timber limit in the Rocky Mountains, concerning which those interested will find full information in the "*Descriptions and Plans of Certain Indian Reserves in the Province of Manitoba and the North-West Territories, 1889.*"

In September, 1888, the Indian population on the reserve was two thousand one hundred and thirty-five. There was at that time one head chief and eighteen minor chiefs. There were twenty-one bands or gentes. So we have nineteen chiefs and twenty-one bands, but there were two bands without a chief. One of these contained nearly forty persons and the other nearly seventy, and a large majority of them were females. The number of children between six and sixteen years of age was about six hundred. The number of deaths during the year was as follows: forty-one boys, twenty-three girls, fifty-one adults. The adults' ages were chiefly from forty to forty-five years, but there were some of an extremely old age. The number of births was fifty-one boys and thirty-four girls. The amount of treaty money paid was ten thousand eight hundred and seventy-five dollars. The Indians are fed by the Government, and the daily ration averaged *per capita* 1.09 pounds of beef and .37 of a pound of flour. The number of acres broken on the reserve was two hundred and forty, and the number under fencing three hundred and thirty-five acres. The number of houses on the reserve was two hundred and sixteen. Several of the old houses had been rebuilt and improved by the Indians during the year, and fifty new ones had been erected. The Indians owned from fifteen hundred to two thousand horses and an innumerable company of dogs. During that year there were grown by the natives nine hundred and eighty-six bushels of potatoes from thirty-three acres. Owing to the dry rot the crop was not a good one. They

had ninety acres of oats, producing one thousand three hundred and fifty-six bushels; three acres of wheat with fifty-six bushels, and over twenty-five acres of garden produce, which did well. The number of employees on the reserve was the agent, farm instructor, clerk, interpreter, issuer and assistant issuer, cook, and three white men as labourers to teach the Indians farming. A medical man visited them regularly to attend to the sick. During the busy season of the year, say from March till November, four Indians were employed by the Government and received pay, all the rest of the Indians doing their own work.

In October, 1891, the writer paid a special visit to the reserve, and he found the Indians building better houses, growing larger crops, getting out hay contracts for the mounted police, and understanding more clearly their relations to the white settlers. At that time the average daily ration *per capita* was one and a quarter pounds of beef without shrinkage and .42 of a pound of flour. This would not be sufficient for supporting an adult, but when we note the fact that a child one day old receives the same, it can be easily seen that where there is a large family of children there will be sufficient. It is not the intention of the Government to feed them without doing something to support themselves, as that would beget and maintain a system of pauperization, but to keep them from being in want and at the same time encourage them to toil. The Indians receive their rations at the Lower Agency twice per week, and the same number of times at the Upper Agency. The reason for issuing at the two agencies is the distance of the bands from each other, the Indian camps being located for more than thirty miles along the Belly River.

It costs the Government about fifty dollars per head for supporting the Blood Indians. The Blood Indians consume over five thousand dollars' worth of beef per month. Five or six years ago they consumed over six thousand dollars' worth per month. The beef is furnished by contractors, who are paid eight and a half cents per pound. They must give the whole animal with the offal, but they are only paid by the weight of the four quarters, the head and offal being delivered, for which they receive not any compensation. All the hides which are not needed by the Indian Department for the use of the Indians are taken by the contractors at two dollars each. There are between seventy and eighty hides per month, of which the Indians use about thirty-five, the contractors paying two dollars each for the rest, the price being deducted from the amount paid for the beef.

From October, 1889, to October, 1890, there were born twenty-four boys and thirty-five girls, and there died twenty-two boys, thirty-one girls and fifty-five adults. The estimated population of the Blackfoot

Confederacy is about as follows:—Bloods, 1,700; Piegans, 600; Sarcees, 300; and Blackfeet, 1,100. The causes of the decrease are the same as are found amongst all native races, but this question will be fully discussed in a subsequent paper. Each Indian is paid annually the sum of five dollars for himself and the same amount for each member of his family. Each minor chief receives fifteen dollars and the head chief twenty-five dollars per annum, with the five dollars *per capita* for their families.

The following list of Indian names obtained by the writer at the Piegan reserve will reveal the method and meaning of Indian names. The names of some of the male members of the camp were Eagle Tail Feathers, No Runner, Chief White Cow, Dog Child, Crow Flag, Weasel Tail, Gives to the Sun, Elk Blood Head, Dog's Head, Sits in the Middle, Running Eagle, Man who Talks, Man who Lost his Blanket, Iron Breast, Black Weasel The Spider, Big Plume, Good Killer, Surrounded at Night. The names of some of the women were as follows:—Small Medicine Lodge, Weasel Woman, The Woman to Look at.

Strangers were always honourably treated, the best seat beside the chief being given, and the choicest pieces of the buffalo supplied. They were hospitable to the stranger when in the camp, and he was under the special protection of the chief. After he had gone, however, he was in danger at the hands of the young men, the renegades of the tribe, who felt free to deprive him of his property, when once he was beyond the jurisdiction of the chief.

A NEW READING OF THE BUDDHIST INSCRIPTIONS OF INDIA.

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(Read 3rd December 1892.)

Those who have made a study to any extent of the early history of India cannot fail to have been struck with its shadowy indefiniteness down to the time of the Mohammedan conquest, in the eleventh century. The two native chronicles, the Raja Tarangini of Cashmere, and the Mahavansa of Ceylon, are little less doubtful authorities than the ancient epics, and the Puranas or mythological treatises. Abul Fazl, the other Mohammedan historian, and the Chinese Buddhist pilgrims add little that is trustworthy. When, therefore, it was known, through the labours of General Cunningham and his officers of the Archæological Survey, that ancient inscriptions abound in the sites of ruined cities and towns, great expectations were raised in the breasts of enquirers after historic truth, and a solution was looked for of those difficulties which compelled the translator of Lenormant's Ancient History of the East to omit the chapters on the history of the Indians. "To the book on the 'History of the Indians,' however, serious exception has been taken, not from any want of ability in M. Lenormant's treatment of the subject, but from a distrust of the reality of the foundation on which all the history of Ancient India rests."[1] It was confidently hoped that the reading of the inscribed monuments would remove the cause of this distrust, but such has not been the case.

The most important, because the most ancient, of these inscribed monuments are known, from their structure and from the emblems which accompany them, to be of Buddhist origin. The written characters engraved upon them have been, therefore, called Buddhist, and they constitute what is sometimes termed the Lat Alphabet, because many of the inscriptions in them are found on *lats* or pillars. This alphabet is square, as is the modern Hebrew, but has no connection with it, nor with any other alphabet, Semitic or Aryan. Nevertheless, it appears to have been the foundation of the Sanscrit or Devanagari characters, and

of other legible but aberrant types of later growth found throughout India and extending beyond its borders.[2] The phonetic powers of the Lat Alphabet remained a mystery down to 1838, when Mr. James Prinsep, secretary of the Asiatic Society of Bengal, announced his discovery in the journal of his society. After some discussion, it was generally agreed that Mr. Prinsep had found the key to the Buddhist inscriptions by identifying their characters as forms of the well known Devanagari.[3] Hundreds of inscriptions have been partially translated, some of them of considerable length. They are not Sanscrit, they are not Pali, though more like that than anything else; their language is a sort of *lingua franca*, intelligible only to their translators, and not always even to them. They are full of dates and donations and mendicant monks, and do not afford a single satisfactory fragment of ancient history. For all the gain they are to the historian they might as well have kept their worthless secrets.[4]

The translations of Mr. Prinsep, General Cunningham, Professor Dowson, and many learned Babus, proceed on the assumption that the writers of the documents were Brahmans, or at least an Aryan people. Philologists have conclusively shown that the substratum of Indian speech is Turanian, a substratum that exists, almost in its integrity, among the aboriginal or non-Aryan tribes of the empire.[5] Archæologists also have referred the most ancient buildings and monuments of India to these Turanians, who excelled their conquerors in the magnificence of their architecture.[6] There is no evidence that Brahmans ever became Buddhists, whose religion was a revolt against their own. Gotama Buddha himself was a Kshattriya, not a Brahman, and although many people of Kshattriya descent may be found among the Hindoos of to-day, this fact no more makes an Aryan of the original Kshattriya than incorporation in the west makes an Italian of the Etruscan, or an Englishman of the Pict. All over Europe, in Armenia, in Kurdistan, and in Persia, the Aryan incorporated the Turanian, annexing part of his speech and assuming the greater portion of his history and mythology as his own property, but nowhere was this process of amalgamation so complete as in India. The Brahman pantheon overflows with Turanian deities, the Indian epics are the records of Turanian warfare and adventure, the very post-positions of the Sanscrit language exhibit Turanian influence upon something more stable than mere vocabulary. That there was a genuine Turanian empire in India is proved by architectural remains, which are many of them easy to identify with Buddhist cult. Did the wealthy monarchs and powerful emperors who built these great edifices leave no written trace of their existence? Unless Mr. James Prinsep was mistaken, they did not. I prefer to believe that Mr.

James Prinsep was mistaken, and that his mendicant monks, etc., are the result of an utterly foundationless system of interpretation.

There was a time when the Turanian was regarded as a savage, having no part in the civilization of the world, which was supposed to have been accomplished altogether by peoples of Semitic and Aryan origin. True, the Egyptians and Phœnicians have always been credited with much of the world's early progress, but the language of the former was sub-Semitic, and that of the latter purely Semitic, whatever their original nationality may have been. No ancient Turanian writing was known. Nevertheless, there were such unmistakable evidences of early culture, distinct from that of Semites and Aryans, that anthropologists adopted various hypotheses to account for it, the chief of which was that known as the Cushite. These hypotheses led to nothing. But, after the cuneiform character had been mastered, it was found that at least one of the languages written in it, namely the Akkadian of ancient Babylonia, was not Semitic but Turanian, its affinities being with the Ugrian languages of Europe, still existing on the shores of the Baltic, along the Urals, and in Hungary. The Akkadian was a very ancient civilization, from which the Assyrians and later Babylonians borrowed largely. Of late years, the Hittites have come into prominence by their widely scattered monuments, and through the records of their numbers and their prowess contained in the Egyptian and Assyrian records. They also were a Turanian people. There was still another ancient people, closely allied politically, but neither ethnically nor philologically, with the Akkadians and the Hittites. These were the Sumerians, of whom we yet know very little, but who will yet appear, by indubitable testimony, as the eastern ancestors of the Celts. With them, however, we have at present nothing to do. Since Dr. Edkins, of Pekin, first drew attention to the subject, attempts have been made to connect the Akkadians of old with the Chinese of to-day by more than one writer; but none, save myself, has sought to trace in other lands, with the exception of Dr. Sayce, in Asia Minor, the powerful and widely spread Hittite nation.[7]

It may pertinently be asked why I select the Hittites rather than any other people of Turanian origin, in seeking the rise of ancient Turanian culture. The answer is, because there is no evidence of such culture having been developed by any other branch of that division of the human family, unless it were by the Akkadians, and these I firmly believe to have been under Hittite rule. Comparatively few families of the human race have achieved a historical position, the greater number constituting the Ground race, which possesses no independent history.

Certain families, endowed with peculiar virtues, physical and mental, rose to the position of kings of men, and lorded it over sections of the Ground race. Such kings of men among the Turanians were the Khita or Hittites, and under their power fell Semitic descendants of Aram, Lud, and Elam, and many Hamitic, and, perhaps, even Japhetic families. Thus, the historical Turanian peoples of antiquity, whatever the origin of their physical substratum, bore the Hittite name until their dispersion by the arms of the Assyrian Sargon in the end of the eighth century B.C., and some of them down to a much later date, as witness the Khitan of northern China in the tenth, eleventh and twelfth centuries A.D., and the Khitts of the Siberian Yenisei at the present day. In a former paper, I have shown that the people who built up a large wooden civilization in Siberia from the fifth century onward, and who left written monuments behind them, were branches of the Khitan, as their monuments denote, and, at the same time, the Japanese in migration. They migrated to Siberia from northern India, and their language is that fundamentally of the aboriginal or Turanian peoples of Hindostan. They were Buddhists, some of them fleeing from the persecution of their Pagan relatives or of the rising Brahman.[8]

The Siberian characters are not identical with those of the Lat alphabet, being much more rudely formed; but it is a matter of very little difficulty to exhibit the essential unity of the two systems of writing. In tracing the characters west of India, and between that country and the ancient Hittite habitats in Media, Mesopotamia, and Syria, they appear on Parthian coins down to and beyond the Christian era, but, so far as the time of migration is concerned, the labours of the excavator have not yet discovered the historical connection. A study of the original significance of the hieroglyphic Hittite characters enables the investigator to recognize, in the Parthian and Lat Indian, conventional or cursive forms of the same, and to read them without difficulty. When thus read, the inscriptions yield, like the Siberian, archaic Japanese. In this connection I may say that Dr. Jonathan Goble, who was a member of Commodore Perry's expedition to Japan, and who has studied Japanese for more than forty years, thus corroborates my Siberian readings: "As translated by you, I find these ancient legends almost pure classical Japanese, that I can make out without the least difficulty." As I do not claim the ability to write classical Japanese, it is evident that I must have found it already written. Such also is the language of the Buddhist inscriptions of northern India, whose writers, in several places, call themselves by the name Kita. Some translations of these I have presented in The Hittites, and a number of them, furnishing important data for India's lost history, will yet be found in the

Hittite Track in the East. I may add that a copy of an imperfect inscription in the Siberian character, found in Japan, has been lately sent to me.

The differences between Mr. Prinsep's method and results and those pursued and attained by me are: first, that while he has regarded the inscriptions as the work of an Aryan people, I have identified them with India's aboriginal population. He has, therefore, sought to find in their characters an Aryan alphabet, and has certainly succeeded in showing that the Sanscrit letters were derived from them. While not disputing his conclusion, I deny the inference that the writers of the Lat and those of the Devanagari attached the same phonetic values to the related characters. This inference in Asia Minor, in Etruria, in Celt-Iberic Spain, and elsewhere, has hitherto closed the gateway of knowledge and concealed the existence of ancient Turanian letters and history. Secondly, while the translations of Mr. Prinsep, and his scholarly coadjutors and successors, are made, often very inconsistently, out of a bastard Pali, otherwise unknown, those I present are made consistently throughout in classical Japanese, such as scholars can read without difficulty. Mr. Prinsep and his followers, thirdly, leave many parts of inscriptions untranslated, while I maintain, and prove in practice, that a whole document only partially translated is not translated at all. Fourthly, inscriptions, as read by Mr. Prinsep's alphabet, present unhistorical bathos. As read by mine, they are found to be royal documents of great historical importance. In fine, I stand towards Mr. Prinsep's system in the same attitude as I stood, and now still more firmly stand, towards those who read the Etruscan characters with their Greek equivalents. The so-called Lat alphabet is, like the Etruscan and Siberian systems of writing, a Turanian or Hittite syllabary.[9]

The fish like character denoting an m syllable, the rounded yoke or bow one giving a power of r, and that shaped like a square Hebrew *shin*, which has the phonetic value *go*, alone serve to link the Lat syllabary with the ancient Hittite, on the one hand, and, on the other, with the so-called runes of Siberia. Where and when did the cursive Turanian writing originate? It is natural to think that it followed the Hittite hieroglyphic; but, so far, we possess no Hittite hieroglyphic documents that approach by many centuries the most ancient inscriptions in the cursive syllabary. In the Sinaitic Peninsula, and dating back to the time of the patriarch Abraham, are Hittite documents of enormous value to the historian, and these are all in the cursive character.[10] Hittite hieroglyphics must thus have been much earlier, since there can hardly be any doubt that the conventional cursive was the

simplification for ordinary use of the original cumbrous hieroglyphic in Hittite as in Egyptian. The proof of the antiquity of the Sinaitic inscriptions will appear shortly in "The Hittites in Sinai," in which I have translated over a hundred of these venerable documents, records of the kings who reigned in Edom, of the princes of the Hittite confederacy, and of the shepherd kings of Egypt and their viceroys. It is probable that all alphabets and syllabaries may yet be traced back to one original, doubtless hieroglyphic in character, when it will be found that the variation to be considered most is not the form of the symbols but the varying phonetic values which diverse peoples attributed to the same form. As I have elsewhere stated, the names Aleph, an ox; Beth, a house; Gimel, a camel, and Daleth, a door; given by Semitic peoples to the first few letters of their alphabet, are proof positive of a hieroglyphic origin, and that a Turanian people would make such characters stand for the first syllable of ox, house, camel, and door in their own language. In the accompanying plates I present the equivalents of the Buddhist or Lat Indian syllabary, both as set forth in the Asoka proclamations and in ordinary royal inscriptions, and the texts I have chosen for illustration. My object is to aid scholars in interpreting these ancient monuments, and thus to place the early history of India on a firm foundation. The variations of characters in the Asoka proclamations are really a species of vowel notation, as yet imperfectly understood. Those in the ordinary syllabary are partly of the same nature, and partly due to changes in style arising from difference of time and place. As the most ancient inscription read is of 337 B.C., and others are later than the Christian era, it is natural to find varieties of style in writing. The characters represented in the plates are gathered from thirty-seven inscriptions, and are sufficient to enable the student to decipher any ordinary Buddhist Indian document presented to him.

The first text I present is that of the proclamation of Asoka, the Buddhist Constantine, found at Girnar. This I read, not as the interpreters of such inscriptions have so far done from left to right, but from right to left. The transliteration gives :—

I.

1. *shi· keki· shimane kiwame· ta ga*
2. *tashita· rikidowa ka ashika nega ki*
3. *girifu no aka hoi ochi· manete*
4. *janage ta fumi kareta nomija hitoshi*
5. *nai· kanegaki kaki· shimane rakajimu nomija*

6. *shimane · rametaki nomija tada · waraki-kuyashi*
7. *yajashi kimi oju ko asoka nega kiki kaki*
8. *mi · kami nise ochi ko asoka nega oja kaki · shimane*
9. *ka amakeja jahoi ochisa kage jarija sageshi ja*
10. *kimi ta ari o aba wa ketsu me-ta · goyoshi no · gune ochi ja*
11. *kija · ro medota amanji amake jai hoi ochisa*
12. *o · ja hoi ochishi maji · saki riyoki ri tama tashiremi*

II.

1. *go yasoki nega kija · kaki-shimane mori nomi arima ja*
2. *mi · riyoshi araja wareta riki ga araja · nakena tomi gijo ri · doji kimi mito*
3. *jame araja takara · ochi ja-rikima ga norashi go tokara-ochisha-ki*
4. *arata · mita adan go yasoka nega kija kaki · shimane arimaja sonaye*
5. *tosha arakiku sumeshaka · tosha fujune tomata tokiji tomata tokashime*
6. *tosha arakiki o tosha araki akerami jagasha rakuraku · tosha aritaka ji*
7. *tosha arakiki o tosha araki · akerami · jagasha-rakuraku-tosha wabi tosha wa amu*
8. *shiki sumijaji ga aruha · yajira kiki yado mamori kisha buda kido jomaye · ji* [11]

The following is the translation of this inscription, as closely rendered as English construction will permit:—

I.

1. Do, I pray, what the amnesty defines.
2. Hear the desire of the accomplished warrior, the excellent Asoka.
3. Cease to imitate the evil customs of the unrighteous.
4. Take individually the confession which the writing has given.
5. Do not deliberate, I pray ; receive pardon beforehand.
6. Accept universal pardon gratis, repenting wickedness.
7. Obeying the amiable lord, hear, I pray, the desire of the excellent Asoka.

8. Behold, leaving false gods, obey, I pray, the desire of the excellent Asoka.
9. For pardon leave pleasant evil rites, despise secret sports.
10. He who deserts the army of the violent will obtain protection from him who is lord.
11. Hear, quit the pleasant evil rites delighting in beguiling lust.
12. O do ye forsake evil rites, Tsurami, sovereign of the kingdom of the Sakis.

II.

1. Hear, I pray, the desire of the excellent Asoka: do ye accept the amnesty.
2. Behold, violence, the violence of strength, has divided the kingdoms. Within, law and justice cease: alike are lord and king.
3. Leave the assembly of assailing violence; leave the assembly of the measurers of strength. Hearken!
4. Hear, I pray, the desire of the new king named the excellent Asoka. Pardon is offered you.
5. Ended are the violent years; the evil years have ended now, have ended forever.
6. The violent years, O the violent years, blushing, I despise. Shall there not be years of pleasantness?
7. The violent years, O the violent years, blushing, I despise. Let years of pleasantness, a circle of peaceful years, remain.
8. As the master of the dwelling, hearing the housebreaker, guards the abode, so lock the door of Buddha.

Under the name Tsurami, Asoka appears in an inscription on a stone found in a mound at Mathura. Unfortunately this inscription and others of Tsurami are much defaced. It is No. 1 on Plate IV. The defacement is in the lower line, but the words, *Gotama shone wo*, can be made out, and, as elsewhere, the expression *Gotama shone wo ireru*, to give close attention to Gotama, or, as we would say, to give the heart to Gotama, appears as a Buddhist formula, it may be taken for granted that such is the meaning of the partially erased sentence. The upper line is quite distinct, and, from right to left, reads as follows:

No. 1. *Katame gosari mashi tsushigo tsugo butsu kisafuki Tsutemama Watatami Mareware Bushiyama go mito Tsurami futa ki 2 fu Buda go*[12]

The translation is: "I have a vow, Tsurami, surpassing all the warriors

of the earth, king of the Tsutemama, the Wata people, Marwar, and Fushiyama; 2 hundred 2 score after Buddha."

The next, No. 2, Plate IV., accompanies a naked standing figure. General Cunningham says: "The first part of this inscription is the only important part of it, the rest being a mere string of names of the donors." Having suggested emendations, he continues: "Adopting these alterations, the opening may be rendered as follows: 'Glory to the Arhat Maharira, the destroyer of the Devas!' (In the reign) of the King Vasu Deva, in the Samvat year 98, in Varsha (the rainy season) the fourth month, the eleventh day. On that very date, etc."[13] Now one ought to be able to do a great deal better than that. The upper line of the main inscription is complete, and the sense of that immediately below it, in which two characters only are wanting, can be accurately determined. The lower lines are very much broken, so that the left half only of the first of these affords material for decipherment. The subordinate square inscription on the right can be made out, but seems to lack a concluding word. The latter may be called the fourth part of the inscription, the other legible lines being 1, 2, 3, from top to bottom. The reading is, as usual, from right to left.

No. 2. Line 1. *Kumiwa mabu Buda hiromeku Tsumaki tama anoho atsufushi magetsu hime wo mire fui ochi tashi bun tsuku*

Line 2. *Sibir mafu ketaru toriwima Watatami Doidota Sibir ga wabi Kitsuuchi ga mito*

Line 3. *Gorami ga yome tsutaru betsu sai Amrita tsuta hime tatsuri*

Line 4. *Tsurami 1 meku maki 4 samura kami Kitsuuchi tsu tsudotatsu wo yobidata nedo ga kifuta.*[14]

The translation is: "The associated monks, proclaiming Buddha, affix the edict, allowing to be seen this great effigy (resembling monument) of the descendant of Tsumaki. Diodotus of the Wata people, king of Sibir and the peaceful Kitsuuchi, tarries to talk over (the affairs of) Sibir. Amrita, the principal wife of (his) successor, joins the widow of Gorami in setting up the monument. Tsurami summoned an assembly of 1,004 nobles of the Kitsuuchi (to inaugurate) the gift of the wife."

As unsatisfactory is General Cunningham's rendering of No. 3, which is on the pedestal of a life size naked figure. He reads: "(In the reign) of Maharaja Vasu Deva, in the Samvat year 83, in Grishma (the hot season) the 2nd month, the 16th day. On that very day the gift of an

image. 'The rest cannot be made out satisfactorily.'"[15] It is true that parts of the document are defaced, nevertheless I read:

No. 3. *Tsushiku ga mito Tsurami 2 maki 2 fu 3 Buda go Tsumaki tama fumi tsuku*

*Amrita ga koga sai Gorami mesume tsuta dzubotsu * ma * mu go bu ma tsuraka aritama*[16]

Translated, it says: "Tsurami, king of the world, 243 after Buddha, affixes the usual writing of the descendant of Tsumaki. His servant . . . joins Amrita, his consort, the daughter of Gorami, in renewing the likeness. . . ."

A brief inscription on the base of a pillar, from Mathura like the preceding, contains the name of the ancestral Tsumaki.

No. 4. *Tsumaki mito Tsutaka Saka ga mito tsuyoshi yaku maki 3 fu Buda hiromeku* [17]

The translation is: "King Tsumaki, the mighty king of the Tsutaka Saka, 160 Buddha proclaims."

But General Cunningham's version is: "In the Samvat year 47, in Grishma (the hot season), the 3rd month, the 5th day. On that date the gift of the mendicant Dharma Deva." [18]

The oldest inscription I have yet translated is:

No. 5. *1 maki 4 ma Buda go Kafutake tori Kita ;*

which, being translated, is: "140 after Buddha, the Kita choose Kafutake." [19]

Professor Dowson reads it: "Presented pillar 126 in the Samvat year 47, in Varsha (the rainy season), the 4th month, the 11th day." [20]

Finally, the following document appears inscribed in a circle surrounding the base of a pillar taken from the Jail Mound at Mathura, whence also came the inscriptions of Tsumaki and Kafutake. It is the clearest and most perfect of all the inscriptions read. It commences at the left hand side, at the break or open space near the bottom, and proceeds upwards and so round the pillar.

No. 6. *Bikrama goku agameke Matori fu arukumeku yobutata yodatsute ashikaze katsu daman Tsutaka Saki Afumi tsutome tatsure tami ki tsuneha renha, tsuneha fumi 4 ki 4 fu Buda go* [21]

Translation: "Vicram, the valiant, ruling the exalted city Mathura, summoned serviceable foot-soldiers to exterminate the Tsutaka Saki.

The mind of the people to serve Afumi sets up the usual orderly customary writing 480 after Buddha."

This, Professor Dowson interprets: "In the Samvat year 47, in Grishma (the hot season), the 4th month, the 4th day. Gift to the Vihara of the great king, the king of kings, the son of heaven, *Huvishka* by the mendicant Jivaka Udeyana. May it be to the benefit, welfare, and happiness of all in the four quarters (of the world)." [22]

In commenting briefly upon the preceding inscriptions, which will be discussed at length in my Eastern Track of the Hittites, the first thing to consider is the matter of date. The era is that of the death of Buddha, for which many dates are given, varying from 543 to 477 B. C. Vikramaditya is said to have fixed the Samvat era in 56 B. C., and with this statement the last inscription, which puts an event in his reign 480 years after Buddha, or 63 years B. C., according to the long computation of that reformer's death, agrees. But No. 3 places Tsurami or Asoka in 243 after Buddha, and No. 2 makes Diodotus of Bactria his contemporary. Now, the eldest Diodotus began to reign about 255 B.C., and the younger in 237 B.C. If 543 be the date of Buddha's death, Tsurami's date and that of Diodotus is 300 B.C.; but, if 477 be the true figures, the interview between Tsurami and Diodotus was in 234 B.C., which better satisfies chronology. The Buddhist convention under Asoka is said to have been held about 250 B.C., so that the date 543 is completely ruled out of court. The oldest date found, that of Kafutake, is 337, that of Tsumaki is 317, and that of Vicramaditya, 3 A.D.

Kafutake is the Gopaditya of the Raja Tarangini, which presents its array of Turanian monarchs in a Sanscrit dress, and he is the Sopeithes of Strabo, or, as Curtius calls him, Sopithis.[23] Strabo calls him a monarch of the Cathaei, and says that he opened his city gates to Alexander of Macedon and entertained him royally. This was in 326 B.C., or eleven years later than the inscription. Kafutake must have been an old man before he died, for another inscription of his states that, in 180 after Buddha, he superseded the Nandas by the Sakas. He may thus be also identified with Chandra Gupta, who overthrew the Nandas. Tsumaki, therefore, whose date is 317, must have been his contemporary during part of his long reign, and may be identified with the Sisunaga who helped Chandra Gupta in his revolution, and with the Sangaeus, whom, according to Arrian, Alexander set over Peucolaitis.[24] Both Kafutake and Tsumaki belonged to the Sakas or Sacae, but the former was also elevated to the throne of the Kita, who are the Cathaei of ancient writers on India. The Indian name for Tsurami is Dharma, often conjoined with his religious title Asoka, which is just the Japanese

yasuki, the peaceful, in the form Dharmasoka. He seems to have been recognized by all the Hittite rulers of northern India, and even of countries to the west of it, as an emperor or king of kings. One of his inscriptions enumerates the Tsutemame or Sushmins, the Wata, Futa, or Bakhdi, that is the Bactrians, the people of Marwar, and the Fushiyama, or ancient Kambojas to the north-west of Cashmere, as his subjects. The Bactrians, however, were under the sway of Diodotus, as were the Sibir or people of Cabul, so that Diodotus must have been tributary to Asoka.

Several inscriptions of great interest illustrate the intervals between Tsurami and Kafutaki on the one hand, and between him and Vicramaditya on the other. These are set forth with ample comment in the Hittite Track in the East. Vicramaditya, who on his inscription calls himself simply Bicram, sets himself forth as a Tsutaruki or Gupta king, by making Afumi, the Abhimanya of the Raja Tarangini, his heir to the throne.[25] The overthrow of the Sakas by this monarch is one of the best attested facts in ancient Indian history. If, as seems most probable, the date of Buddha's attainment of *nirvana* was 477 B.C., this event must be placed at or near the year 3 A.D. If he re-established Brahmanism, or rather the heathen worship of his own race, which contributed to modern Brahmanism its chief elements, as is very probable, seeing that several of his predecessors apostatized, his change of faith did not affect his successor Afumi, who appears to have remained a Buddhist. The kings of the Sakas belonged to the Varma dynasty, and, on another inscription mentioning Vicram and Afumi, are also called Kitan. No inscription so far read by me makes any mention of a Brahman. When idolatry is referred to, it is called the worship of the old gods, in other words, the Sintoism of Japan. There is not the least evidence for an ancient Brahman kingdom in India, but it will be very hard to convince a Hindoo that none such existed. However, the missing materials for the ancient history of India are now in the world's possession, and a little labour on the part of epigraphers, who are also Japanese scholars, will soon bring a flood of light to bear upon one of the most interesting but, until now, most obscure chapters of the history of the past.

NOTES.

[1] Lenormant and Chevalier, Manual of the Ancient History of the East, Vol. II., preface.

[2] Max Müller, a Sanskrit Grammar for Beginners, p. 1.

[3] Journal, Asiatic Soc'y of Bengal, March, 1838, pp. 219 seq.

[4] Reports of the Archæological Survey of India.

[5] Hunter's History of India, p. 23.

[6] Ibid.

[7] Edkin's China's Place in Philology: Rev. C. J. Ball and others in the Proceedings Soc'y Bib. Archæol., and in the Babylonian and Oriental Record: Campbell, The Hittites, etc.

[8] Siberian Inscriptions, Trans. Canad. Inst., 1890-91, Vol. II., pp. 261 seq. See also The Hittites, Vol. II., p. 325.

[9] See my Etruria Capta, Proceedings Canad. Inst., 1885-86, pp. 144 seq.

[10] Over a hundred of these I have translated in The Hittites in Sinai, yet to appear.

[11] Analysis of the Asoka proclamation:

Part I., line 1. *Shi*, now *se*, imperative of the verb *shi*, *su-ru*, to do.
kaki, now *kashi*, a word used at the end of a sentence of exhortation, entreaty, or request, to give emphasis to it. May be Englished by, I pray you.
shimane, now *shamen*, pardon, subject of *kiwame*.
kiwame, part of verb *kimawe-ru*, to define, determine, decide.
ta, the relative, who, which, generally followed as here by its genitive particle *ga*.

line 2. *tashita*, now *tasshita*, preterite of *tasshi*, to be thoroughly versed, expert, or proficient in.
rikidowa, now *riki-idomi*, strong contender, warrior.
go, a term of respect or politeness used in addressing a superior, meaning honourable, excellent.
Yasoka or *Asoka*, the religious name of the monarch.
nega, now *negai*, desire, request, prayer.
ki, part of the verb *kiku*, to hear. The imperative *ja* probably followed *ki*, but, if so, it has been erased from the inscription.

line 3. *giri*, right, just.
fu, a negative particle.
no, genitive post-position.
aku, bad, wicked, qualifying *hoi*.
hoi, now *hō*, rule, law, precept.
ochi, to fall, leave, run away.
maneta, preterite of *mane*, *mane-ru*, to imitate, do like.

line 4. *janage*, now *sange*, confession, acknowledgment.
ta, the relative.
fumi, a writing, book, letter.
kareta, now *kureta*, pret. of *kure*, to give.
nomi ja, now *nome yo*, imperative of *nomu*, to drink, swallow.
hitoshi, now *hitoshii*, same, equal, alike, literally one man.

line 5. *nai*, not, is not, have not.
kanegaki, now *kangaye-ru*, to think on, reflect, consider.
kaki, or *kashi*, and *shimane*, *shamen*; see line 1.
rakajimu, now *arakajime*, beforehand.
nomi ja or *nome yo*; see line 4.

line 6. *rametaki*, mostly, now *aramattaki*, a combination of *ara* as in *aramashi*, generally, and *mattai*, *mattaki*, whole, complete, entire.

line 6. *tada*, adverb signifying, only, merely, but with verbs of giving and receiving, hence gratuitously.

waruki, adjective *warui*, *waruki*, bad, but here used as a noun, wickedness.
kuyashi for *kuyami*, to repent, whence *kuyashii*, producing repentance.

line 7. *yajashi*, now *yasashii*, amiable : same root as Asoka.
kami, superior, ruler, lord.
oji, *ojiru*, to fear, dread, or *ōji*, *ōjiru*, to obey, comply.
kiki, to hear ; see line 2.

line 8. *mi*, imperative or interjectional form of *miru*, to see, behold.
nise, false, counterfeit, as in *nise-gane*, counterfeit money.
ochi, to leave ; see line 2.

line 9. *ga*, genitive post-position governing *shamen* of preceding line : here to be Englished by *for*.

amaki, adjective *amai*, *amaki*, sweet, pleasant, also foolish.
jahoi now *jahō*, wicked religious rites.
kage, shadow, and, metaphorically, secret, unseen.
jarija, noun, from *jare*, to play, frolic, sport, *jarashi*, make to play.
sageshi ja, imperat. of *sageshime*, to look down on, despise.

line 10. *to ari*, now *tari*, from *ta*, who, and *ari*, is, who is.
yo and *yu* are ancient poetical forms of the preposition *yori* from.
aba, now *abai*, to shield from danger, protect, defend, but here a noun.
wa or *wo*, the untranslated sign of the accusative case, here governed by *katsu me*.
katsu, to gain, conquer. The following *me* is a future particle (Aston's Grammar, p. 168).
ta, the relative.
goyoshi, now *tsuyoshi*, strong, powerful.
no, genitive particle.
gune, now *gun*, army.

line 11. *ki ja*, imperat. of *kiku* to hear.
ro, now *iro*, love, lewdness, lust.
medota, now *madotta*, pret. of *madoi*, to err, be deluded, misled.
amanji, to relish, delight in.

line 12. *mashi*, an old form for "you" (Aston's Grammar, p. 63).
riyoki ri, better *riyo giri*, rightful kingdom.
tama, master, qualified by the adjective *giri*, and, with it, governing *giri* in the genitive of position.

Part II., line 1. *mori nomi*, compound verb, consisting of *morai*, receive, accept, and *nomi*, drink, swallow.

arima ja is not *arimasu*, the honorific form of *ari*, to be, to have, but *ari* with an abbreviated form of *mashi*, *imashi*, the old 2nd personal pronoun, and the imperative sign *ja*.

line 2. *riyoshi* or *riyochi*, estate, kingdom.
araja or *arasa*, violence, harshness.
wareta, now *waritta*, pret. of *wari*, to divide, part, rend asunder.
riki, strength ; *ga*, genitive post-position.
nakena now *naka ni*, within, composed of *naka*, middle, among, and *ni* post-position, in, into.
tome, part of verb *tome*, *tomeru*, to stop ; *tomari*, to cease.

line 2. *gijo*, law, statute, ordinance.
ri, right, just, proper.
doji, composed of; *do*, same, and *ji*, way; hence, "alike," synonym of *onaji*.
kimi, if properly transliterated, is same as *kami*, lord, master.
mito, king, same as *mikado*, door being *to* or *kado*.

line 3. *jame araja*, now *seme arasa*, from *seme*, *semeru*, to assault, attack, harass, and *arasa*.
takara, noun derived from *takari*, to assemble, collect in a crowd.
rikima, now *rikimi*, a lengthened form of *riki*, strength.
norashi, now *norishi*, literally a maker of measurement.
ochi sha, same as *ochi ja*, leave (imperative).

line 4. *arata*, new; the present word for new is *arata-na*, but *arata* forms *arata-me*, to renovate, reform.
adan, now *ada-na*, nickname.
arimaja seems the same as *arimashi*, is to you, without dative sign.
sonaye, *sonayeru*, to set before, offer.

line 5. *tosha*, should be *toshi*, year, probably an error in transcription.
arakiku, lengthened form of *araki*, violent, rude, wild.
sumeshaka should be *sumashika*, from *sumashi*, to finish, end; in the past tense marked by *shika*.
fujune or *fujun*, bad, contrary, unfavourable, adverse.
tomata, now *tometa*, pret. of *tome*; see line 2.
tokiji, from *toki*, time, now abbreviated to *toji*, now.
tokashime or *tokishime*, compounded of *toki*, time, and *shime*, sum, total.

line 6. *akerami* or *akarami*, to become red, to blush.
jagasha, same as *sagesha* of Part I., line 9, to despise.
rakuraku, easy, pleasant, free from pain.
aritaka ji, *aritaki ji*, from *aritai*, *aritaki*, wish to be, let there be, and *ji*, negative future particle (Aston's Grammar, p. 157). The whole will thus read: shall there not be?

line 7. *wabi*, the old word for peace, which is now *wa*, while *wabi* means apology, supplication.
wa, a circle, cycle.
amu, supposed old form of *amashi*, to let remain, leave over.

line 8. *shiki*, now *shika*, so, thus, as.
sumijaji, compound noun, the parts of which seem to be *sumai*, a residence, and *jusho*, having the same meaning.
aruha, now *aruji*, lord, master, landlord, owner.
yajiri, abbreviated form of *yajiri-kiri*, a thief, house-breaker.
yado, house and grounds, home.
mamori, to guard.
kisha by a strange inversion is *kaku*, thus, which, as I pray, the Girnar Japanese makes *kaki*, and the modern, *kashi*.
Buda, the usual form of Budha's name in the inscriptions; in modern Japanese, *Butsu*.
kido should be *kado*, door or gate.
jomaye ji, *jomaye*, a lock; the following *ji* is equivalent to *shi*, do.

[12] Analysis of No. I.

katame, promise, agreement, pledge, vow.
gozari masu, I have, there is (Aston's Grammar, 174).
tsushigo, from *tsuchi*, earth, and *ga*, genitive particle.
tsugo, all.
butsu, to strike, *bushi*, a soldier.
kisafuki, from *kisoi*, to excel. Most Jap. verbs now ending in *oi* and *ai* are abbreviations of older forms in *ofu* and *afu*: the final *ki* is the attributive termination.

go, following names of places, is the genitive *ga*.
mito or *mido*, now *mikado*, honourable door, king—emperor.
futa or *buta*, now *futatsu*, 2: the *tsu* is generally omitted.
ki, sometimes *maki*, Japanese *momochi*, hundred. The short form is the Yeniseian *ki*, *kihe*, *kise*.

2 *fu*: the numeral 2 is expressed by the two lines = , and the following *fu* is an abbreviation of the old word for 20, now *hatachi*, which was probably *futachi*.

Buda go; the latter word is a post-position, after, behind.

[13] Archæological Survey of India, Vol. III., Pl. XV., No. 20, and p. 35.

[14] Analysis of No. II.

line 1. *kumi-wa*, now *kumi-au*, joined together in one company, qualifying *mabu*, which is not modern Japanese. A nun is *ama*, and *ambu* is quiet, peaceful, happy. The word occurs in several inscriptions in India and Siberia, and denotes a monk.
hiromeku, adjective or participial form of *hirome*, to spread, publish, proclaim, governing Budha.
tama, abbreviation of *ato-me*, successor.
anoho, compound of *ano*, that, and *ho*, place, meaning, that there.
atsufushi, form of *atsui*, thick large, great, liberal. Final *i* after a vowel generally stands for an ancient *fu*.
magetsu, adjective form of *magai*, imitation, *magaye-ru*, to imitate.
hime, now simply *hi*, a monument: *me*, a common suffix, as in *ato-me*, successor, *kake-me*, weight.
wo, particle specifying the direct object of the sentence, *hime-mire*, to see.
fui ochi; *fui* seems to be the old form of *ho* in *ho-dai*, at liberty, and to have the same meaning: *ochi*, like the Basque *utzi*, means to leave,
tashi-bun; *tasshi-gaki* is a government proclamation, and *bun* or *fumi*, which takes the place of *kaki* or *gaki*, has the same meaning, writing.
tsuku, now *tsukeru*, to affix; *tsuku* is the neuter form.

line 2. *Sibir*, a country, perhaps Cabul.
mafu ketaru, now *katarai*, converse together; *mafu*, a humble word for *ifu*, to say, denoting the subordinate position of Diodotus.
tori-wima, inversion of *hima* or *fima-dori*, to delay, literally, take leisure.
Wata-tami, the Bakhdi or Bactrian *tami*, people.
Doidota, the Sanscrit Devadatta and Greek Diodotus.
ga, the genitive post-position.
wabi, peaceful; see Asoka inscription.
Kitsuuchi, a north-western people, the Khasas.
mito, king, now *mikado*.

line 3. *Gorami*, a king, whose inscriptions show him to have been contemporary with part of the reign of Tsurami or Asoka. He ruled Mekasa, perhaps Massaga of the Assaceni.

yame, now *yamome*, widow or widower, difficult at times to distinguish from the Indo-Hittite *yome*, daughter.

tsutaru, now connected with *tsutawaru*, to inherit, meaning the heir or successor.

betsu, separation, distinction, here answering to *betsu-jo*, special.

sai, wife.

Amrita, a woman's name: Raja Tarangini, L. III., sl. 9, 463, L. IV., sl. 658.

tsuta, for *tsuida*, preterite of *tsugi*, to join.

hime; see line 1.

tatsuri, now *tateru*, but regular transitive form of *tatsu*, to stand.

Part IV. *Tsurami;* see Asoka inscription.

meku maki: me is Indo-Hittite 10, and *maki* 100.

sumara, now *samurai*, a gentleman, one privileged to wear two swords.

kami, lord, ruler.

tsu, old genitive particle.

tsudotatsu seems to be a compound of *tsudoi*, to assemble, and *tatsu*, to stand up. As *tachi*, *tatsu* is in Indo-Hittite often used transitively; it may here be the verb governing *kifuta* that in the text is supposed to be lost. In this case the passage will read: "Of 1004 nobles of the Kitsuuchi Tsurami summoned an assembly—to set up—the gift of the wife."

wo, the mark of the accusative, often omitted.

yobidata, preterite of *yobi-dasu*, to call out, summon.

nedo, Indo-Hittite and Siberian vulgar term for wife, from *ne*, *neru*, to sleep, and *do*, together, similar in form to concubine.

kifuta, now *kifu*, a contribution or donation.

[15] Archæological Survey of India, Vol. III., Pl. XV., No. 16, and p. 34.

[16] Analysis of No. III.

line 1. *tsushiku*, now *tsuchi*, earth, the earth.

ga, genitive particle; *mito*, king.

2 maki 2 fu 3; maki 100, *fu* 20.

Buda go, after Budha.

tama, is not *tama*, master, but modern *ato-me*, descendant.

tsuneho, from *tsune*, usual, and *ho*, place, this usual.

fumi, writing.

tsuku, affixes; see above, No. II., line 1.

line 2. *koga*, from *ko*, this, and *ga*, genitive, the demonstrative employed for the possessive adjective of the third person.

sai, wife.

mesume, now *musume*, daughter. This reading is doubtful, as it is the only place in which I have found *mesume*.

tsuta, joined; see No. II., line 3.

dzubotsu, now *sobadzukai*, attendant. Compare *dzusa*, follower, servant, and *dzui-shin*, follower, disciple.

* *ma* * *mu go hu ma*—illegible.

tsuraka, likeness, from *tsura*, the face.

aritama, now *aratame-ru*, renovate.

[17] Analysis of No. IV.

Tsumaki, a king's name.
Tsutaka Saka, a branch of the Sacae.
tsuyoshi, strong, mighty.
yaku, old numeral 1.
hiromeku ; see No. II., line 1.

[18] Archæological Survey of India, Vol. III., Pl. XIV., No. 11, and p. 33.

[19] Analysis of No. 5.

ma, old form for 10 abbreviated.
tori, take, seize, obtain, admit, select.

[20] Archæological Survey of India, Vol. III., Pl. XIV,, No. 14, and p. 34.

[21] Analysis of No. VI.

goku, sometimes, as now, *goki*, stout-hearted, brave.
agameke, adjective, from *agame-ru*, to exalt, honour.
fu, a chief city.
yobutata, pret. of *yobi-dashi*, call out, summon.
yodatsuta, adj., from *yodatsu*, to be of use.
ashikaze, now *ashigaru*, foot soldiers.
katsu, to conquer.
daman, now *dam-metsu*, to exterminate.
tsutome tatsure, to serve, to set up.
tami ki, people's mind.

[22] Archæological Survey of India, Vol. III., Pl. XIV., No. 12, and page 33.

[23] Raja Tarangini, L. I., sl. 341 ; Strabo, XV., l. 30, 31 ; Curtius IX., 5.

[24] Vishnu Purana, Bk. IV.; Mahavansu, appendices ; Arrian, Anab. IV., 22.

[25] Raja Tarangini, L. VI., sl. 188. Vicramaditya was probably a soldier of fortune under Afumi, for the Raja Tarangini makes Abhimanyu the son of Kshema Gupta, while it does not appear that Vicramaditya ever assumed the Gupta name. At the time of Afumi, the Guptas had become *rois faineants*.

PLATE I.—THE SYLLABARY OF THE ASOKA PROCLAMATIONS.

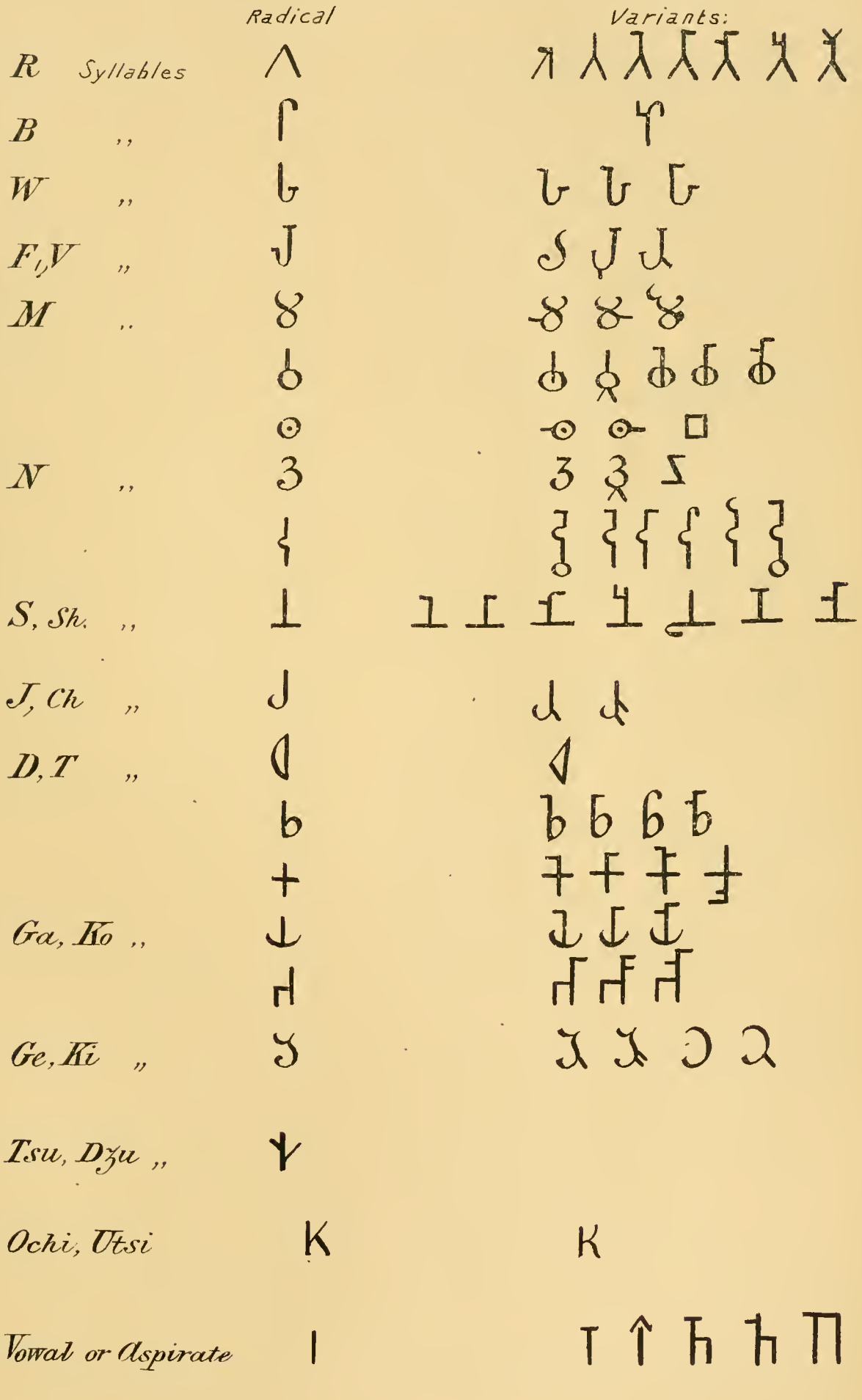


PLATE II.—THE COMMON INDO-HITTITE SYLLABARY.

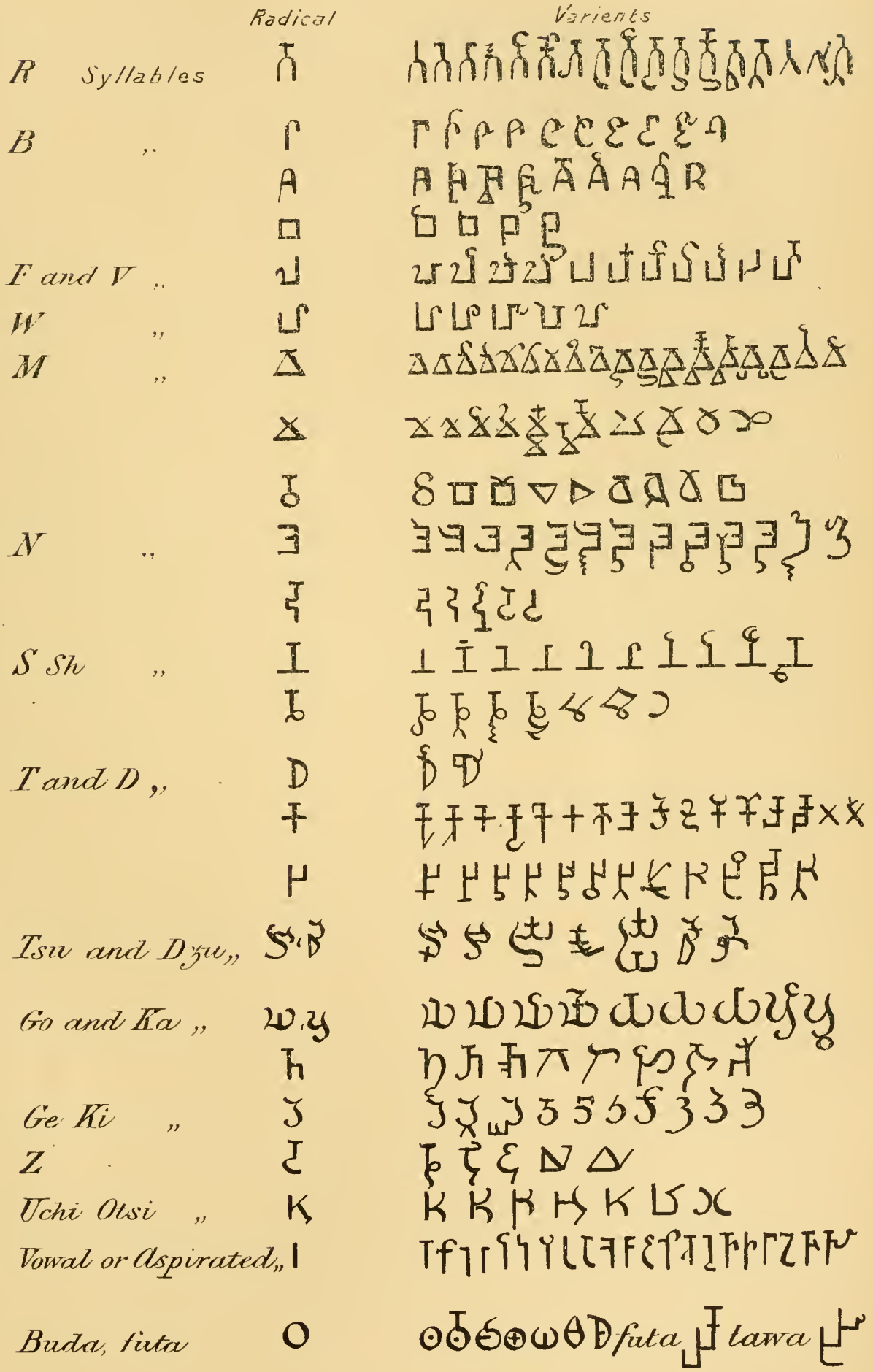
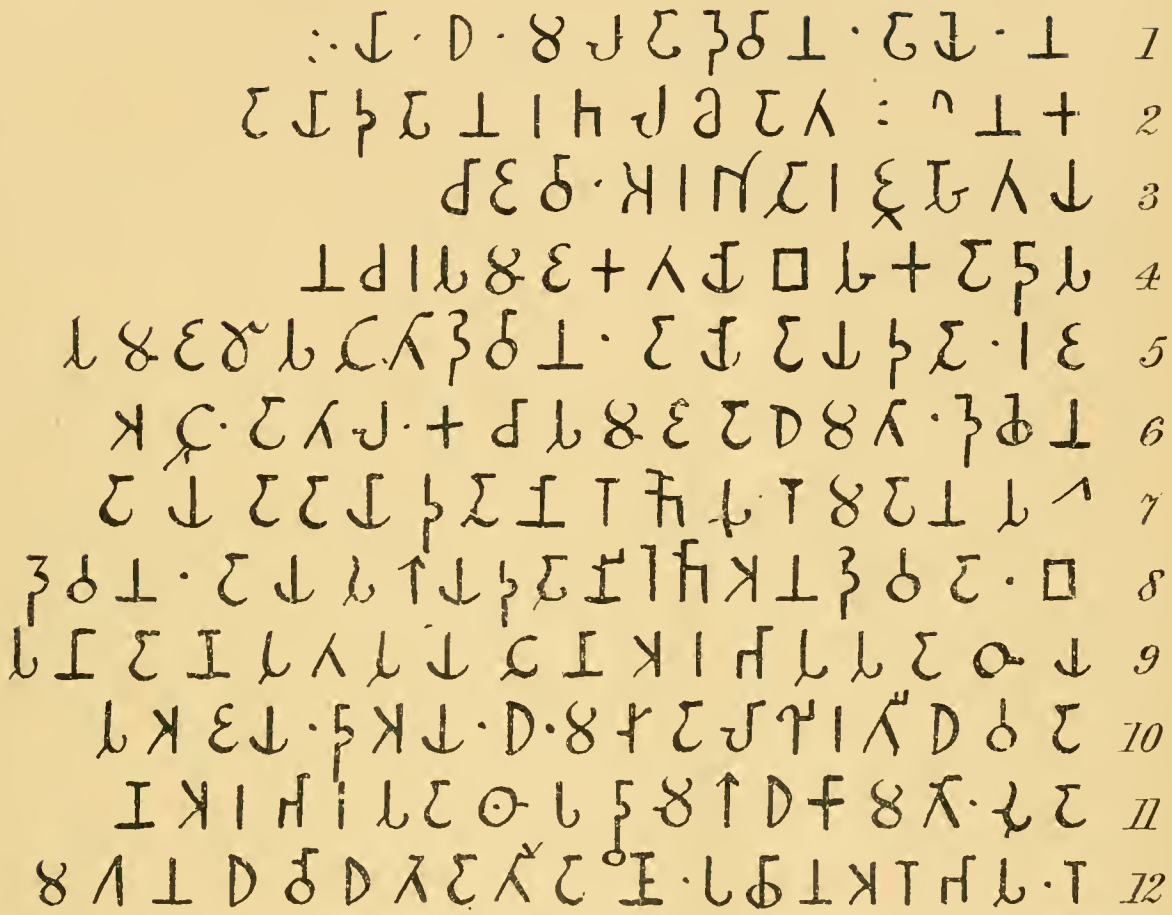


PLATE III.—ASOKA EDICT AT GIRNAR.

PART 1



PART 2

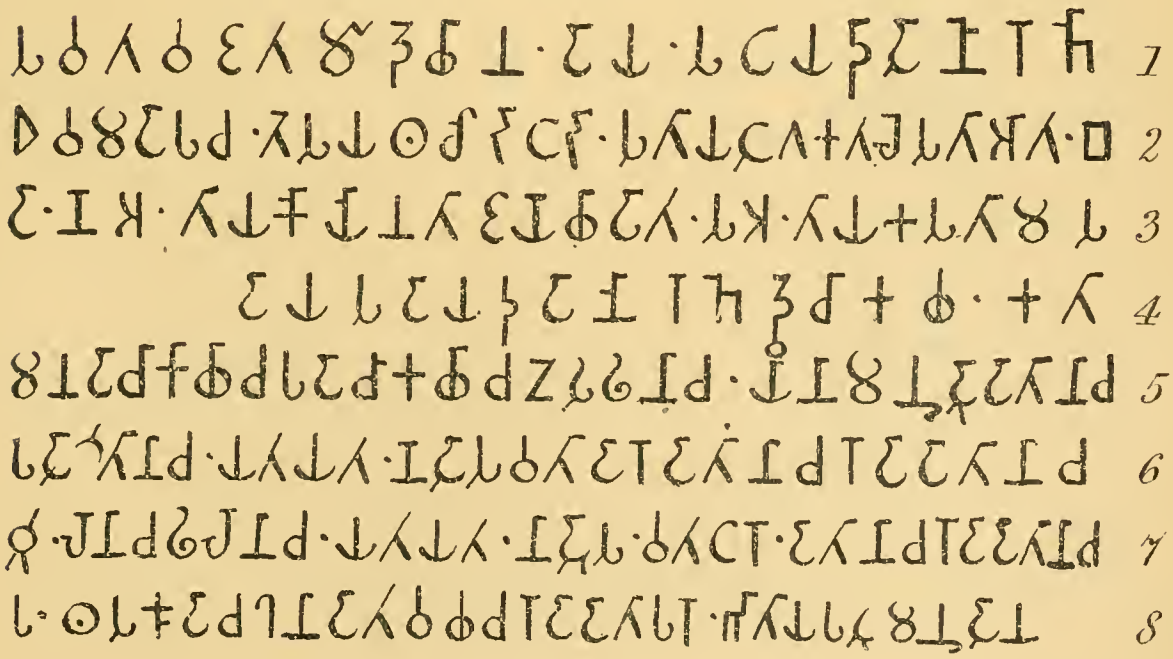


PLATE IV.—INSCRIPTIONS IN THE COMMON INDO-HITTITE CHARACTER.

THE JOURNAL OF CAPTAIN WALTER BUTLER, ON A VOYAGE ALONG THE NORTH SHORE OF LAKE ONTARIO, FROM THE 8TH TO THE 16TH OF MARCH, 1779.

By Captain Ernest Cruikshank.

(Read 7th January, 1893.)

Niagara, 8th March, 1779.—Three o'clock in the afternoon, set off for Canada in a batteau. The weather calm, the season very forward and more than common fine, no appearance of snow, ice, or frost. Rowed to the 12 Mile Pond, encamped; saw this evening a large flock of pigeon in trees and numbers of geese and ducks in the pond.

12 Mile Pond, 9th March.—At six put off, the wind and swell high and ahead; but the hands being good oarsmen kept the lake till the 20 Mile Pond or river, when the wind increasing and no harbour nearer than the 40 Mile Creek, made for the Creek and was near striking on the bar, but the force of the waves on the stern and working briskly of the oars got into the river. An Indian cabin on the bank inhabited by Missassaugas. The 20 Mile Creek is a fine stream, though shallow at the entrance and narrow at the mouth, but very wide a little way up. The land in general level, though higher on the east side. Timber—oak, pine and a few chestnut trees. The place appears as the head of the lake, though it turns for forty miles westerly beyond this before the lake turns to the north-eastward. This creek heads near Point Obino, 18 miles above Fort Erie on Lake Erie, likewise the 12 and 16 mile creeks rise out of the swamp near Lake Erie. Boats can go up this creek about 15 miles. Saw a number of blackbirds. 3 o'clock put off, the wind falling, and rowed till four, hoisted sail and continued till six, rowed till 7 o'clock, put in shore and encamped on a low, sandy beach, five miles from the creek in this bay forming the head of the lake, hauled the boat up the distance from the said creek to Niagara, 60 miles.

10th March.—Put off at daylight, every appearance of a fair wind, rowed an hour, the wind came ahead, increased with a high swell, was obliged to put into the river at the head of the lake, shipped water twice before we made the river, the wind at east. From the west side of 20 Mile Creek the land lowers till you come 12 miles off this, where it forms a fine sandy beach with a few trees near the shore, which continues a

mile beyond this where the shore turns and runs about north-east, whence it is a broken shore with a bank of seven or eight feet and no landing with boats for ten miles. In windy weather a boat may go up this river 10 or 13 miles, whence there is a carrying place of 13 miles into the river Tranche, which falls into the lake of St. Clair. After you enter the river about 400 yards it forms a lake or pond of four miles over and six long. Between it and the lake is a narrow neck of land of 400 yards wide, covered with a few trees and reedy grass; on this the Indians hut in the fishing season. This pond in the season has great numbers of all sorts of water fowl. Round this lake or pond a quantity of hay might be made. This morning about seven, the weather being clear and little or no wind, we saw the spray or mist of the Fall of Niagara, being from this about south-east. A canoe with Missassaugas came to us, gave me ducks, in return gave them powder and shot and bread, they being out of ammunition. I learned from them that Joseph Brant had left his boat here and took two canoes 11 days ago.

Head of the Lake, 11th March.—Got up at daylight, wind still ahead and too hard to put out; amused ourselves shooting ducks and blackbirds. Set in raining at ten this morning. An hour before sunset a thunder gust with lightning and a heavy rain. Thick fog and calm, though still a high swell. Set off a little before sunset. Half an hour out fog cleared off with a hard north-west wind very squally, could not sail, rowed till eight o'clock, the wind and swell too high to go any further this night; put into the 12 Mile Creek with much difficulty. Got into the creek, obliged to drag the boat, water sufficient, but a fall in the mouth of the creek; ten o'clock at night before we could kindle a fire; the ground and wood wet; encamped on a bare point. The wind blew down our tent. Up this creek a sawmill might be erected, having fine rapids and good timber for boards. This creek in the fall is filled with salmon, as all the other large runs of water are in the fall season. From Niagara to this the lake shallow near the shore, though good anchoring ground off in the lake.

12th March.—Set off at seven o'clock this morning; the wind at N.W.; too much off shore to sail; rowed till 11 o'clock; put into the river called the Credit, 17 miles from the last station. The shore in general good for boats to land; the land low and a good beach, except the points, which are bluff. Two Missassaugas came to me and informed me a number of them lived up this river. Gave them bread and put off at 12; rowed to the bay above Toronto; hoisted sail: found the wind too high to go round the long point forming the basin or bay below Toronto. Continuing sailing down the bay to the camping place, unloaded the

boat, hauled her over and loaded again in an hour and a half; rowed from this to the beginning of the high lands, encamped on the beach and secured the boat. Toronto was built on a level spot of ground nearly opposite a long narrow neck or point of land running seven or eight miles into the lake, forming a noble bay of eight or nine miles deep, two or three miles from the bottom of which, on the north side, ships can ride in safety. It's strange the French built the fort where they did and not where their shipping were wont to lay, which was a few miles below the fort down the bay. The bay of Toronto was filled with all sorts of wild fowl. Saw on the north side of the bay several wigwams and canoes turned up on shore. The land about Toronto appears very good for cultivation. From Toronto to the river du Credit it is 12 miles across the bay, but better than 20 along shore, which is the way boats must take except the weather is very calm or a light breeze in your favour. From Toronto to the beginning of the high lands is nine or ten miles down the basin, but nearly double round the point.

13th March.—Got off at daylight; the wind from the land, could not sail, rowed till twelve; passed the high lands and a small bay. Put into Pinewood Creek. Here one Duffin resided formerly, since when a Frenchman has resided here. He went off a little before we came. Two houses a little up the creek, one entire, the other stripped. This creek is famous with the Indians for great quantities of fish. The distance from this to the other end of the highlands is about 20 miles, 15 of which are few or no places where a boat could be saved in case of a storm off the lake, the bank being very high and steep, being a mixture of clay and chalk nearly as hard as freestone; it forms a romantic, wild view, in many places appearing like towns in ruins, the relics of houses, remains of chimneys, etc. From the lake you would take it for a large town built of stone partly demolished. Put off at ten o'clock, rowed till three, the wind fair, sailed till four, rowed till six, no wind; put ashore in a deep bay where we found a fine creek, its water as clear as crystal. Encamped a little up the creek in this bay. I believe vessels might ride with safety from the N.E. or N.W. wind, but not from the S.E. or S.W. The distance from this to the Pinewood Creek is about 30 miles, the lake all along forming small bays in which you have a good beach in which a boat may be secure in case of a storm.

14th March.—Set off at daylight; rowed till twelve; the swell increasing with the wind ahead at east, put into a creek called by the Indians Pamituscoteyank (the fat fire); the distance from our encampment 15 miles; at this creek and two others nearly of the same name

the Indians in the fishing season reside.* All those three creeks head near a lake about 30 miles long, distant from this about 50 miles where the Missassaugas have two villages and where the Canadians in winter send traders. Expresses in winter pass this lake on their way to Canada. Set off at one o'clock, the wind off shore, rowed till two; sailed till night; put into a deep bay; found a creek but could not get in, the stream running very rapid; rowed further in the bay and encamped on the beach; secured the boat. From the Fat Fire Creek to this about thirty miles, the shore and particularly the bays level, and good beaches for boats to land and the points bluff, the lake shoal near the shore.

15th March.—Put off as soon as day appeared and rowed till ten; passed a long point which forms two deep bays, one on either side, of ten miles to the bottom. In the bay to the west falls one of the creeks before mentioned, coming from near the small lake inhabited by the Missassaugas. In those two bays vessels might lay secure from storms on the lake, in the west bay sheltered from the S.E. and N.E. winds, in the east from the W. and N.W. winds. The point runs direct into the lake for four miles at least. You can't see the bottom of the east bay in passing across from the end of the point to the main. This bay has a fine river falling into it from the east, which forms a basin and a narrow entrance into it, occasioned by a narrow neck or sandy beach between the lake and river. At 11 o'clock hoisted sail, the wind off shore; at 10 o'clock passed two islands, the one called St. Nicholas, the other never knew a name nor did I know there was one of St. Nicholas; St. Nicholas is about one half a mile in circumference, the other about half that size. St. Nicholas is about one mile from shore, the other much smaller and about two miles beyond it directly out into the lake, either of which would be a safe retreat for vessels in a storm, these islands are about 12 miles east of the beforementioned point forming the two bays. When the wind is high the boats go within two miles of the bottom of these bays and drag the boats across a point of land about 200 yards wide. The distance from our encampment to the point about 12 miles, from the point to St. Nicholas Island about 10 miles. Continued sailing till night, put in shore and encamped on a low point where we found a fine creek and a good harbour in a pond for our boat. Since this morning a great number of wild fowl. From the island to this is about 25 miles; the shore much the same as yesterday, the points not so bluff.

March 16th.—Put off our boat very early, much ice which had formed last night, the wind ahead and partly from the shore which partly drove

* Long, in his travels, p. 78, and elsewhere, mentions this place by the name of Pimistiscotyan Landing. He apparently resided there for some time.

the ice into the lake; rowed till 9 o'clock; came up to the Duck Islands and saw the islands called the False Ducks about south from the real Ducks; the distance I take to be better than 12 miles between the real and the False Ducks as they appear from here. The vessels, if I remember well, made the distance more. Those islands afford a safe retreat for vessels in case of a storm. The islands are much alike, about a mile round and nearly circular distant from the main, four miles and from each other one. The weather calm, rowed across a very deep bay of 20 miles down and about ten directly over. This bay is much larger if taken from the point of a large island to the east and the Ducks to the west part of the main, and the large island on the east side of the bay from the Ducks appears like a number of small islands and in many places a single tree is only seen. Many persons not acquainted with the passage have taken down the bay supposing it to be the entrance of the river, and in coming from the river have imagined the main to the west to be islands from its appearance, and go likewise down this bay. Traders go in two days to the before mentioned small lake inhabited by the Missassaugas. Continued rowing till the mouth of the Caderouqua Bay, the wind coming fair sailed into Caderouqua harbour. The distance from our encampment to Caderouqua about 32 miles, the land in general very low and swampy back; the points rocky and shallow for some way out. There is so much of a sameness in the appearance of the land from the highlands to the river that a few miles off in the lake there is no knowing one place from the other. Nothing but the walls of the barracks and houses remain of the Fort. It appears never to have been a place of strength, neither do I think its situation will admit its being made so, the land very stony and ground back to command it. It has a fine safe harbour for shipping. The little island opposite the Fort improved in the French time is now covered with small trees.

I am told vessels cannot sail out of Caderouqua to the lake but with a north or north-west wind. An east and south wind are fair winds for ships once clear of the river to Niagara. The above are all the observations I made on the north shore of Ontario, which would have been more perfect but for the severity of the weather, which prevented me taking notice of many parts of the shore, neither did I think these remarks would have been seen or would have been more particular.

MEMOIR OF CAPTAIN WALTER BUTLER.

By Captain Ernest Cruikshank.

(Read 7th January, 1893.)

Walter Butler, the author of the foregoing journal, was a man of sufficient note to receive mention in nearly every history of the American Revolution and most of the larger histories of the United States as well. Unfortunately for his reputation, the story of his share in the struggle has invariably been written from a hostile point of view. By his enemies he was regarded as a fierce, cruel, and implacable adversary, delighting in bloodshed and ruin. What he seemed in the eyes of his friends and comrades has never been told.

The eldest son of Lieut. Col. John Butler, afterwards so widely-known as the commandant of the famous corps of rangers bearing his name, he is supposed to have been born about the year 1750 on his father's farm of Butlersburg, in the valley of the Mohawk, near Johnstown. At the outbreak of the revolutionary movement he was, therefore, about twenty-five years of age, and had been admitted to the bar of the Province of New York. Judge Jones, the author of a history of New York during the Revolution, who knew him as a law student, describes him as "a youth of spirit, sense, and ability." Another authority speaks of him as a "pretty able young lawyer." His name appears as one of the two attorneys who signed the protest of the Loyalists of Tryon County in March, 1775. During the summer of that year he accompanied Guy Johnson to a Council of the Six Nations at Oswego, and afterwards went with him to Montreal to aid in the defence of Canada. His zeal and activity as a Loyalist must have already given him some prominence, as popular rumour named him as one of the leaders of the Indians who were expected to make a descent upon the Mohawk valley at that time.

Very shortly after his arrival at Montreal he received a commission from General Carleton, the governor of the province, as ensign in the 8th or King's regiment. In company with Lieut. Peter Johnson of the Indian department, he gained distinction in the skirmish on the island of Montreal, which resulted in the defeat and capture of Ethan Allen, by leading a party of thirty rangers and Indians against the flank of the enemy at a critical moment. This movement threw them into confusion and decided the fate of the day. The traveller Long names the same

two officers as being in command of a small party of whites and Indians of whom he was one, that defeated a superior force of Americans near Isle Aux Noix soon afterwards, taking many prisoners. Butler then drops out of sight for a year.

He appears to have gone with his father to Fort Niagara, where a part of his regiment was stationed, and remained there until the spring of 1777. The monotony of garrison duty in a lonely frontier fort became insupportable and he begged eagerly for employment in the field. Carleton wrote approvingly in reply to Captain Lernoult (2nd February, 1777,) "Ensign Butler has testified a desire to serve, for which he is much to be commended, and as he seems a promising young man, in case any part of the regiment moves in the spring, I should be glad he was to accompany them." Accordingly he was one of the officers of that regiment selected for the expedition against Fort Stanwix in the summer of that year. In July he was appointed captain of a company of Loyalist refugees enlisted by his father to serve as rangers with the Indians and with the special object of "controlling and restraining them from committing acts of cruelty." In command of this he took part in the bloody battle of Oriskany, in which General Herkimer's relieving force was defeated. His knowledge of the country and the people then caused him to be selected by Colonel St. Leger to carry a flag of truce and a proclamation of amnesty to the inhabitants of the German Flats who were reported to be anxious to return to their allegiance. A large number of these had accordingly assembled at the house of Rudolph Shomaker, a magistrate and a Loyalist, but who had remained inactive, within two miles of Fort Dayton, and Butler was addressing the gathering when the house was surrounded by the advance guard of General Arnold's army on its march to relieve Fort Stanwix and he was taken prisoner with the whole of his party. Heedless of his flag of truce and the purpose of his visit, Arnold directed him to be tried by a drum-head court-martial as a spy. That compliant tribunal promptly found him guilty and sentenced him to death although he produced his instructions and commission as an officer of the British army. Arnold at once approved their finding and ordered the sentence to be executed next morning. But a number of officers of the 1st New York regiment startled at such severity petitioned for a respite, which was finally granted, and he was sent a close prisoner to Albany. He was there confined in a small and filthy cell in the common jail, heavily ironed and treated with the utmost harshness. In the course of some months he became seriously ill. Col. Butler declared his belief that he was treated with such extraordinary severity simply because he was his son, and naturally made every effort to obtain his exchange. Fortunately, General

Schuyler, whose enmity to the Loyalist party was most bitter, was relieved about that time by the Marquis de la Fayette in the command at Albany. A number of the inhabitants who had known Walter Butler as a student in that town, sympathizing with his sufferings, seized the opportunity to petition for his removal to more comfortable quarters. They asserted that his life would be in great danger if he remained where he was much longer. He was soon afterwards removed to a private house under a strong guard. The sentence of death, however, still remained suspended over his head. About the end of April, 1778, he made his escape; a horse was provided for him by his friends and he rode out a free man into the valley of the Mohawk, where all the roads were known to him from boyhood. Although weak and greatly emaciated, he accomplished the perilous journey of nearly four hundred miles to Fort Niagara in safety, At the Seneca village of Canadasaga (near the present town of Geneva. N.Y.) he found his father encamped with his corps of rangers swelled by new recruits to upwards of 200 men. Col. Butler was preparing for his descent upon Wyoming, but observing that his son was quite unfit for service in the field, he despatched him to Quebec in the hope that the journey would re-establish his health. He travelled swiftly. On the 17th of May he arrived at Niagara; on the 4th of June he laid before General Haldimand, in Quebec, a careful memorandum describing the movements of the rangers and Indians, and stating his father's proposals for adding two companies of French Canadians to his regiment, for the purpose of counteracting the efforts of La Fayette and other French officers to detach the Six Nations.

Sir John Johnson's correspondence with his brother-in-law, Daniel Claus, throws some striking and suggestive light upon the heartburnings and intrigues which prevailed among the Loyalists themselves. The letters of both constantly breathe a spirit of most intense hostility to the Butlers.

On the 29th of June, Johnson wrote:—"Young Butler attends at Headquarters constantly, though I cannot perceive there is any great notice taken of him. He says he waits orders before he can proceed up the country. I should be sorry his flight should occasion the death of any of our poor friends."

Again, on the 16th of July, he said:—"I have given him (General Haldimand) a very plain and honest account of Butler and his son, not concealing a single circumstance of his whole conduct which has come to my knowledge, and I think I can discern that a change in his opinion of this great man's merit and services will surely take place, if not already the case. He asked me yesterday what he would be about all this time;

that he thought he would have struck a blow ere now. I told him I thought I might venture to assure him that it was not his intention ; that he would remain where he was or thereabouts till he could join the army from York with safety, or till it would be too late to do anything. He told me the other day that young Butler was a pretty genteel man. I took the opportunity to give my opinion of him pretty freely."

Walter Butler did not return to Niagara till the end of July, and consequently had no part in the destruction of Wyoming. Soon after he joined his company at Oquaga, an Indian village near the east branch of the Susquehanna, his father was forced by a severe attack of rheumatism in the head to hand over to him the command of the entire corps and leave the Indian country altogether for the remainder of the year. During August, the main body of the rangers remained in the vicinity of Oquaga in readiness, if a favourable opportunity offered, to make a raid on the enemy's frontier, or if need be to protect the Indian villages from attack, but their scouts and reconnoitering parties ranged the entire border from the Susquehanna to the Mohawk and Oswego. Early in September an avenging force from Wyoming advanced in the direction of the Seneca country, but retired after burning two small villages before Butler could gather a party strong enough to attack it with any prospect of success. When he found that the invaders had evaded pursuit he sent Captain Caldwell with the main body of the rangers to destroy the German Flats, where extensive magazines of provisions had been formed for the supply of the enemy's army and garrisons in New York. This was swiftly and thoroughly accomplished without the loss of a man. During Caldwell's absence Butler continued to collect the Indians and enlist recruits for the rangers, with the intention of dealing a still more effective blow at Cherry Valley, where a great quantity of grain and many cattle were collected for the use of Washington's army. This movement was delayed by the sudden advance of a second column of nearly 1400 men from Wyoming which reached and destroyed the village of Oquaga, but then hastily retired. Captain Butler had awaited the invaders' approach at Canadasaga, where he was joined by 400 Senecas and a few volunteers from the King's regiment in garrison at Fort Niagara. When the Americans commenced their retreat he felt that the time had arrived for his counter-stroke at Cherry Valley, if it was to be executed that year, for it was already the beginning of November. The forest paths were fast becoming impassable, and the settlement he designed to attack lay within sixty miles of Albany. He began his march at once with 200 rangers and volunteers and 321 Indians. The journey was tedious and fatiguing from the condition of the roads and stormy weather. On the 9th of November they met and captured the whole of a scouting party,

composed of a sergeant and eight men sent out from Cherry Valley, by whom they were informed that the garrison, consisting of a Massachusetts regiment of continentals, numbering 300 men and 150 local militia, occupied a strong palisaded fort near the centre of the settlement, but that most of the principal officers lodged in a house about a quarter of a mile outside its walls. They had already been warned of Butler's approach by an Oneida Indian, but apparently felt quite secure against any attack.

When darkness overtook Butler's party next evening they had advanced by a forced march within six miles of the fort, and he proposed to the Indians that as soon as the moon rose they should make a dash forward and surround the officers' quarters while he attempted the surprise of the fort itself with the rangers. To this the chiefs readily agreed, but it then began to rain heavily, and the Indians at once scattered for shelter in a pine wood and obstinately refused to move an inch till morning. It was then decided to send Captain McDonnell with fifty picked rangers and a body of Indians to surround the house where the officers lay and cut off all communication with the adjacent settlement, while Butler himself, at the head of the remainder, made a rush for the fort. They had advanced with this intention quite unobserved along a bye-path until within a mile of the place, when some Indians in front fired at two men cutting wood. One of these escaped, although badly wounded, and gave the alarm by his cries as he ran. The remainder of the Indians rushed off in pursuit as soon as they heard the sound of the firing and gained a long start of the rangers, who were halted for an instant by their officers to reprime their rifles. The major of the Continental regiment, with one or two others, succeeded in getting into the fort, but Colonel Alden, five other officers, and twenty men were killed in the attempt, and Lieut.-Col. Stacy, three subalterns, and ten privates were taken prisoners. The colours of the regiment were abandoned in the house and burnt with it in the general scene of destruction which followed. The garrison of the fort, to favour the escape of their officers, opened a fire of both cannon and musketry upon their pursuers, and although this was briskly returned by the rangers for ten minutes all hope of taking the place was seen to be futile.

In spite of the greatest efforts on the part of the officers in charge of them the Indians at once dispersed in small parties, killing the inhabitants or taking them prisoners, and plundering or burning their houses. A vigorous sally of even a small part of the garrison might be sufficient to drive the whole in headlong flight from the valley. To guard against the evident danger to which they were exposed by their own heedless-

ness and misconduct, as well as to provide for the safety of his own men, became Butler's first duty in this distressing situation. He quickly assembled the rangers, and after destroying an abandoned blockhouse, took possession of a rising ground near the fort. It was then about noon, and he found it necessary to retain possession until nightfall, while his men were stiffened with cold and drenched by the pitiless November rain. Meanwhile the valley for many miles was ablaze with burning houses. Released from the constraint imposed upon them by the presence of the troops, the Indians quickly threw off the control of their chiefs, and the handful of white officers attached to them, and began to execute indiscriminate vengeance for the recent destruction of their villages. Many of the hapless inhabitants, including some women and children, were killed, and the lives of the remainder saved with much difficulty. When at last night came, Butler ventured to retire about a mile, having for six hours overawed by his defiant attitude a force of at least double his numbers, which had every incentive that passion could furnish to leave their intrenchments and attack him. He next rescued as many of the prisoners as possible from the hands of their captors. Large fires were built for their comfort, and they were protected by a strong guard during the remainder of the night.

At day-break, Captain McDonnell, with fifty rangers, and Brant with an equal number of Indians, were despatched to complete the work of destruction. The remainder of the Indians and the weakest men among the rangers were directed to begin their retreat in charge of a great herd of captured cattle destined for the supply of the famished garrison of Fort Niagara. The main body of the rangers was formed near the fort to repel a sortie. But even the sight of fresh ravages failed to draw out the garrison, and when at length every building outside the fort was consumed, Butler quietly began his homeward march. So slight had been the resistance they encountered that only two rangers and three Indians were wounded.

Before he finally left the valley Butler released seven men, ten women, and thirty-two children whom he had recovered from the Indians with a letter addressed to General Schuyler, in which he said :—

"I am induced by humanity to permit the persons whose names I send you herewith to remain, lest the inclemency of the season and their naked and helpless situation should prove fatal to them, and expect that you will release an equal number of our people in your hands, amongst whom I expect you will permit Mrs. Butler and family to come to Canada, but if you insist upon it, I do engage to send you moreover an equal number of prisoners of yours taken either by the

rangers or Indians, and will leave it to you to name the persons. I have done everything in my power to restrain the fury of the Indians from hurting women or children, or killing the prisoners who fell into our hands, and would have more effectually prevented them but they were so much incensed by the late destruction of their village of Oquaga by your people, and shall always continue to act in that manner, as I look upon it beneath the character of a soldier to wage war upon women and children.

"I am sure you are conscious that Col. Butler or myself have no desire that your women or children should be hurt.

"But be assured, sir, that if you persevere in detaining my father's family with you that we shall no longer take the same pains to restrain the Indians from hurting prisoners, women and children, that we have hitherto done."

In his despatch to Colonel Bolton, he frankly admitted the shocking misconduct of the Indians. "I have much to lament," he stated, "that notwithstanding my utmost precautions and endeavours to save the women and children, I could not prevent some of them falling victims to the fury of the savages. They have carried off many of the inhabitants and killed more, among them Colin Cloyd, a very violent rebel. I could not prevail on the Indians to leave the women and children behind, though the second morning, Captain Johnson (to whose knowledge of the Indians and address in managing them I am much indebted) and I got them to permit twelve who were Loyalists, and whom I had concealed with the humane assistance of Mr. Joseph Brant and Captain Jacobs of Oquaga, to return. The death of the women and children upon this occasion may, I believe, be truly ascribed to the rebels having falsely accused the Indians of cruelty at Wyoming. This has much exasperated them, and they are still more incensed at finding that the colonel and those who had laid down their arms, soon after marching into their country intending to destroy their villages, and they declared they would be no more falsely accused of fighting the enemy twice, meaning they would not in future give quarter."

Apparently the only reasonable foundation for the odium which has been so long attached to Walter Butler's name, is the charge that he connived at, or it is even said, encouraged the cruelties of the Indians on this occasion. This he indignantly and vehemently denied at every opportunity. When at length a tardy reply was received from General Clinton in February, 1779, to his letter to General Schuyler already cited, levelling a distinct accusation against him and other officers, but

assenting to the proposed exchange of prisoners, he warmly replied at once in these terms :—

" We deny any *cruelties* to have been committed at Wyoming, either by whites or Indians ; so far to the contrary that not a man, woman or child was hurt after the capitulation, or a woman or child before it, and none taken into captivity. Though, should you call it *inhumanity*, the killing *men in arms in the field*, we in that case plead guilty. The inhabitants killed at Cherry Valley do not lay at my door ; my conscience acquits me. If any are guilty (as accessories) it is yourselves ; at least the conduct of some of your officers. First, Col. Hartley of your forces sent to the Indians the enclosed, being a copy of his letter charging them with crimes they never committed, and threatening them and their villages with fire and sword and no quarter. The burning of one of their villages, then inhabited only by a few families—your friends—who imagined they might remain in peace and friendship with you, till assured a few hours before the arrival of your troops that they should not even receive quarter, took to the woods ; and to complete the matter, Colonel Denniston and his people appearing again in arms with Colonel Hartley, after a solemn capitulation and engagement not to bear arms during the war, and Colonel Denniston not performing a promise to release a number of soldiers belonging to Colonel Butler's corps of rangers, then prisoners among you, were the reasons assigned by the Indians to me after the destruction of Cherry Valley for their not acting in the same manner as at Wyoming. They added that being charged by their enemies with what they never had done, and threatened by them, they had determined to convince you that it was not fear which had prevented them from committing the one, and that they did not want spirit to put your threats against them in force against yourselves.

" The prisoners sent back by me, or any now in our or the Indians' hands, but must declare I did everything in my power to prevent the Indians killing the prisoners or taking women or children captive, or in any wise injuring them. Col. Stacy and several other officers of yours when exchanged will acquit me, and must further declare that they have received every assistance before and since their arrival at this post that could be got to relieve their wants. I must, however, beg leave by-the-by, to observe that I experienced no humanity or even common justice during my imprisonment among you."

There seems to be no just reason to doubt the truthfulness of his defence. Even had he been abnormally deficient in humanity the simple fact that his mother, three brothers, and a sister were held as hostages by his enemies, besides fifty other women belonging to the families of some

of the principal officers of the rangers and Indian department, must have operated as a powerful motive to induce him to exercise all possible restraint upon the Indians, and his instructions were most direct and explicit upon that point.

Owing to the lamentable slaughter attending it, General Haldimand expressed but a qualified approval of the expedition, while he warmly commended the conduct of its leader. In a letter to Colonel Butler of the 25th December, 1778, he said:—"I have received Captain Butler's relation of the operations at Cherry Valley, the success of which would have afforded the greatest satisfaction if his endeavours to prevent the excesses to which the Indians in their fury are so apt to run, had proved effectual. It is, however, very much to his credit that he gave proofs of his disapprobation of such proceedings, and I hope that you, and every officer serving with the savages, will never cease your exhortations till you shall at length convince them that such indiscriminate vengeance even upon the cruel and treacherous enemy they are engaged against, is as useless and disreputable as it is contrary to the disposition and maxims of the king in whose cause they are fighting."

In March, 1779, Captain Butler was again despatched to Quebec with the pay-lists and accounts of his regiment. It was during this journey that he made the notes which have been already read. On the 10th of May he touched at Carleton Island on his return. Ten days later he was again at Fort Niagara. When he arrived, his father, with the main body of his corps was a hundred miles away in the heart of the Indian country, and Col. Bolton, having been informed that an expedition was preparing at Fort Pitt against Detroit, directed him to proceed at once to the latter place with twenty-five rangers in the hope of rousing the western Indians for its defence. Later information changed his route in the direction of Venango and Presque Isle for the purpose of alarming the garrison of Fort Pitt. He appears to have spent the month of June among the Indians of the Ohio or in hovering on the western frontier of Pennsylvania, but before the middle of July he rejoined his father at Canadasaga. When he arrived there he found that many of the Indians were absolutely starving, and the rangers were living on scanty supplies of salt provisions brought painfully by batteaux and pack-horses from Niagara. At length, when his men were suffering "everything that hunger and disease could inflict," and being reluctantly driven to the conclusion that if they remained there any longer they must soon become totally unfit for duty, Colonel Butler instructed his son to take command and march to the Falls of the Genesee while he remained alone among the Indians and undertook the difficult task of

keeping them in spirits. The place selected for the encampment of the rangers was much more convenient for the supply of provisions from Niagara, and fish abounded in the river. There is yet in existence a laconic note, written by Walter Butler at this place on the 3rd of August, 1779, to Francis Goring, at Fort Niagara, in which he says :—

"I am obliged to you for the hooks, for sure it is that he that will not hunt or fish, must not eat."

While encamped at the Genesee he learned with great indignation and pain that Lieut. Henry Hare and Sergt. Newberry, of the rangers, had been taken prisoners while scouting and hanged in cold blood by the enemy in front of Hare's own house. In the heat of his resentment he penned a strong remonstrance to General Haldimand, protesting that unless steps were taken by him to restrain the enemy from the commission of such barbarous deeds the rangers themselves must be forced to retaliate in self-defence.

The advance of General Sullivan's army compelled him to march hastily to the Chemung river to oppose the invaders. On the 15th of August the rangers were encamped at Chuckmet, within fourteen miles of the enemy. On the 29th, he commanded them in the battle near Chemung, or Newton, and when forced to retire by superior numbers brought them out of action with very slight loss, although at one time nearly surrounded. On the 10th of September he was at Canadasaga with Rowland Montour and a handful of Indians watching the movements of the Americans, and covering the retreat.

In November, he again accomplished the fatiguing journey to Montreal to settle the regimental accounts ; and to facilitate the exchange of his father's family, which had at length been arranged. On this occasion he was accompanied by Captain John McDonnell, of the 84th, then serving with the rangers. One of Butler's letters gives a stray glimpse of their life in that town during the winter. "We do little else but feasting and dancing," he remarked, with heroic disregard of the English grammar "It has nearly turned my head ; I find it as hard as scouting. In order to change the scene, McDonnell and me intend to make the tour of the mountain every other day on snowshoes."

McDonnell returned to Niagara early in the spring of 1780, but from some unexplained cause, probably ill-health, Butler was detained at Montreal until the beginning of July. However, on the 24th of that month he was again at Fort Niagara, busied in building quarters for his regiment. Apparently his health was too much impaired to permit him to take the field, and on the 30th of September, on the eve of a most

important raid upon the Mohawk Valley, in which the entire available force of the rangers was engaged, his father stated that he was so ill that he had given him permission to go down to Montreal. In December he returned, and spent the winter at Fort Niagara. In April, 1781, he again went down on regimental affairs.

On the 30th May, he informed Major Matthews that he had arrived at Niagara in eight days from Montreal. "The journey has fatigued me not a little," he added, "and returned the ague on me, but this I owe to falling into the water more than travelling. However, I am feeling better, and I hope with care and thinking that something may be done in the active line in some part of the province to get the better of it, but I fear we shall be idle in this quarter. Clark is not in earnest. Should Allen and his Green Mountain Lads return to their duty I would wish, if it would be for the good of the service, a few companies of the rangers were sent to join them. I should like the service, as being convinced we should be doing essential service in that quarter. I have now given over all prejudices against serving with persons who were formerly our enemies. The good of the service requires we shall give up sentiments of this kind."

In July, he again earnestly entreated to be ordered on active service. A few weeks later he complained with bitterness that "the rangers are made drudges of for Mr. Stedman (contractor at the portage) and others."

After months of weary waiting the coveted opportunity for seeking distinction arrived. In the beginning of October he was ordered to take command of a detachment of ten officers and 160 men of the rangers, and join Major Ross at Oswego, for a descent on the Mohawk Valley. The particular object of this expedition was the devastation of the country at Duanesboro', within eight miles of Schenectady, the only part of the entire valley that had hitherto escaped the ravages of war and which, indeed, was thought by its inhabitants to be perfectly secure from invasion, lying in a central situation between that town, Fort Hunter and Schoharie, all of which were strongly garrisoned and fortified. Consequently the attempt would be attended with great hazard. The force employed consisted of 420 soldiers of six different corps and a hundred Indians. Success and even the lives of the party must depend on the speed and secrecy of their movements. The soldiers were all picked men, selected with an eye to their marching qualities and the endurance of fatigue, but the Indians were the "refuse of the tribes."

Their orders were to destroy effectively "all kinds of grain and forage, mills, etc., and all articles which can contribute to the support of the

enemy. They will as usual have the strongest injunctions to avoid the destruction of women and children, and every species of cruelty."

After a harassing march of eight days, in most distressing weather, they gained the Mohawk River by a very circuitous and unfrequented route, as much to the surprise of the panic-stricken inhabitants as if they had sprung out of the earth itself, although they had been forewarned of their arrival at Oswego. Their appearance at Corrystown on the morning of the 24th October was known in a few hours in all the surrounding forts. There they took a number of prisoners, by whom they were informed that there were 600 militia and 400 regular troops at Schenectady, 500 at Schoharie, and 400 more at Canajoharie, besides garrisons in twenty or more smaller forts along the river. They were consequently threatened by the attack of a force at least four times their number and in a manner surrounded by enemies. Major Ross saw that he must make a forced march during the night if he hoped to reach his destination unmolested. The rain fell in floods and the roads were rapidly becoming almost impassable for his jaded troops, still the fourteen miles that lay before them were accomplished before dawn, but although they struggled manfully to keep together and help along their weaker comrades, several became so completely exhausted that they had to be left by the roadside to the tender mercies of an exasperated enemy. They were allowed to rest on their arms for an hour, and at daybreak the work of destruction began. The Indians and a party of rangers were detached for this purpose, while the remainder of the column marched along the road to support them. The settlement was found entirely deserted. By ten o'clock the devastation of the country for seven miles along the river was completed. Three mills, a public granary, a hundred farm houses with their outbuildings were in flames. The troops then reassembled about twelve miles from Schenectady and retraced their steps to Fort Johnson. Shortly after noon they crossed the river there with some difficulty, as the garrison sallied out to oppose the passage, but the commanding officer being killed his men retreated hastily to the shelter of their works. The British column then marched rapidly through the streets of Johnstown under fire from the stone jail as they passed, and halted in the fields beyond the hall for an hour or two to collect provisions. Major Ross then directed Captain Tice with the Indians to lead the way by the nearest route to Carleton Island, carefully concealing his intention from all others to prevent deserters or prisoners giving information to the enemy. He had sent out scouting parties but they failed to gain any intelligence of the movements of the enemy. However, Colonel Willett, who had advanced to Caughnawaga with 500 regulars and a hundred militia the day before, was already close in pursuit. The Indians

had penetrated about a mile into the forest back of Johnstown, and the rear of the column was just entering it, when this force appeared in such a position that Ross saw that he must fight or permit the rear-guard to be cut off. Accordingly he hastily formed his men to receive the attack about a quarter of a mile after entering the woods. Exclusive of the Indians, very few of whom could be induced to return to the fight, he had 354 officers and men in line.

Willett's force had been largely increased during his advance by the junction of fresh troops from Schenectady and other places, and had become so numerous that he was enabled to detach a large party by a path through a swamp to turn the flank of the British and cut off their retreat. His scouts on penetrating the woods were greeted by a volley from the rangers and Indians, who charged at once with their usual yells and whoops and drove them headlong into an open field where the main body was drawn up with two field pieces. Pressing forward rapidly in support, Ross charged it with his entire force and Willett's men instantly gave way, abandoning one of their guns and much ammunition. In the pursuit, which was continued for half a mile, a number of prisoners was taken and many were killed, others owing their escape solely to the weariness of their assailants. So complete was the rout that Major Ross asserted that if the Indians had behaved with any spirit at this moment he could have "crushed the spirit of the rebels on the Mohawk."

As it happened, few of the Indians ventured to leave the shelter of the woods. Colonel Willett with that part of his force which still remained unbroken took up a new position on a rising ground on the flank of the rangers, whence he annoyed them so much by the fire of his remaining field piece and musketry that they were forced to discontinue the pursuit and return to dislodge him. While hotly engaged with this body, the detachment Willett had sent to intercept their retreat issued suddenly from the woods on their right and rear. Obliged to face about to oppose this fresh attack, they drove this party back into the woods, from which, however, they kept up an intermittent but harassing fire for some time. They were briskly pursued and nearly surrounded, but darkness enabled most of them to escape. On this Willett retreated to Johnstown, re-crossed the bridge, and occupied the stone church built there by Sir William Johnson, where he stood on the defensive. The actual loss of the British in killed and wounded was trifling, but about twenty men were so completely worn out by hunger and fatigue that they were unable to continue the march.

The next morning Major Ross resumed his retreat, but owing to the weariness and half-starved condition of his men, who were then put upon

a daily allowance of half a pound of horseflesh and a few handfuls of corn, his progress was necessarily very slow. On the third day they struck the trail leading from the German Flats to Carleton Island, in the midst of a blinding snow storm. The Indians then parted company, taking the direct road to Oneida Lake to recover their boats. Meanwhile Willett had followed in pursuit with 500 picked men, including many Oneida Indians, and when Ross was preparing to cross Canada Creek, appeared unexpectedly in his rear. Captain Butler with a few of the rangers promptly engaged the pursuers to cover the passage of the stream, then much swollen by rain. In the performance of this service he was killed, with three of his men. Major Ross said that he behaved very gallantly, but gave no particulars of his death. Willett reported that he was shot in the eye and instantly killed. A tradition which has been repeated by various writers ran to the effect that he was mortally wounded by an Oneida Indian and begged for quarter. The Indian retorted "Cherry Valley quarter," and immediately killed and scalped him. On this tale the stamp of fiction is evident. Benton, in his "History of Herkimer County," has recorded a more probable version. A dense fog hung over the stream when the Americans reached it, but as they attempted the ford, it drifted away and exposed them for a moment to the fire of the British covering party on the other bank, which killed several men and compelled the remainder to retire to the shelter of the woods. The fog again settled down, and several volleys were fired across the creek quite at random. When the rangers retired, they crossed unopposed and found Butler lying dead. He was recognized by an Indian, and Benton grimly adds that "the scalping part of the tragedy was probably performed in the best style of Indian execution."

Observing that his pursuers had the advantage of the ground and an opportunity of firing at a distance, Ross retired to the first favourable position, when he sent the sick and wounded to the rear and waited an hour for a renewal of the attack. The retreat was then continued with such rapidity that his men quite distanced the enemy, and marched, or rather ran thirty-miles with scarcely a halt. A seven days' journey through a barren wilderness intersected by several streams, passable only on rafts, still lay before them, and they had lost or thrown away most of their blankets and packs, yet this was accomplished with little actual loss of life, though at the price of tremendous physical discomfort and suffering.

Walter Butler's activity and importance had been greatly exaggerated, and his death became the subject of general rejoicing among his enemies. Willett, of course, was not inclined to underrate his own services, and thinking that this event reflected great credit upon him, declared that in

four years Butler "had exhibited more instances of enterprise, had done more injury, and committed more murders than any man on the frontiers. Such was the terror in which he was held by the inhabitants of the frontiers, so cruel an enemy had he been to them that although Cornwallis's surrender took place about this time, yet the inhabitants expressed more joy at the death of Butler than at the capture of Cornwallis." Local traditions were long associated with his memory, and fifty years later the scene of his death was still known as Butler's ford. Still, with the single exception of the attack on Cherry Valley, he had had no share in the numerous incursions of the rangers. Caldwell, McDonnell, and others were much more active. But there was something in this man's personality that riveted the attention of friend and foe.

Haldimand, reporting his death to Lord George Germaine, spoke of him as "a very zealous, enterprising, and promising officer," and in another letter he expressed the hope that "Colonel Butler's good understanding, and the honourable cause in which his son fell, will console him in this heavy bereavement."

That he was not squeamish about bloodshed in fair fight is evident, but the other charges of cruelty laid against him appear to rest on the flimsiest of evidence. Quite recently he has been condemned for permitting himself to be employed in conjunction with the Indians at all. The same censure must rest upon Montcalm and Frontenac, on Sir William Johnson and Washington, on Brock and Drummond, and a host of others.

EARLY TRADERS AND TRADE ROUTES, 1760–1782.

(SECOND PAPER.)

By Capt. Ernest Cruikshank.

(Read 25th February, 1893.)

A most serious interruption to the fur trade during the revolutionary period, though fortunately of brief duration, was occasioned by the invasion of the Province of Quebec by the Americans in 1775-76. The merchants of Montreal attempted to guard against this by entering into a treaty with the invaders when they found that further resistance was useless. The third clause of the terms of capitulation, prepared on the 12th of September, 1775, by a committee of citizens, of which merchants of such eminence as James McGill and James Finlay were active members, reads thus :—

"That the trade in general, as well within the province as in the upper countries and parts beyond the sea, shall be carried on as freely as heretofore and passports shall be granted for that purpose."

To this, General Montgomery replied : "As far as it may consist with the safety of the troops and the public good, I shall be happy to promote commerce, and for that purpose to grant passports as heretofore."

General Wooster, who succeeded to the command of the army of occupation upon Montgomery's death, almost immediately withdrew the pledge so readily given by his predecessor.

"In January last," he informed a committee of Congress in a letter of the 5th of July, 1776, "I called the Indian traders of Montreal together and enquired of them whether they expected passports in the spring to carry their goods, etc., into the Indian country as usual ; they told me they expected that indulgence, but at any rate they should be permitted to carry provisions to their people in the upper country. As I apprehended the granting of passports for the upper country might be attended with unhappy consequences to the interest of the united colonies, as goods they make use of for that trade were much wanted for our army, and there was the greatest reason to expect that by this way our enemies would be supplied with everything they wanted, I did not incline to grant passports without the direction of Congress. I therefore advised them to choose a committee to wait upon Congress for their

direction. They sent Mr. Frobisher, who did not return till the month of April. Soon after I was informed that the merchants were determined to send off their goods in the spring with or without passports, upon which I gave out a general order prohibiting the carrying of any coarse goods out of the city, except such as were needed by the country-people."

When forwarding the petition from the Montreal merchants, borne by Frobisher, General Schuyler prudently took care to represent the situation in such a light as to effectually destroy all its chances of success.

"Mr. Frobisher," he wrote to the president of Congress on the 20th of February, 1776, "delivered to me a letter, signed by himself and several others, containing the substances of the memorial he will present, and requested the mediation of my good offices with Congress. I am very apprehensive, sir, that if these people shall be permitted to go into the Indian country they might, if unfriendly to our cause, be very prejudicial to it, and the sending of such a quantity of provisions will strengthen the enemy at Detroit and Niagara, for by whatever route they go it will be seized by some one of the garrisons and appropriated to their own use. Mr. Frobisher's letter urges the danger of their traders starving if a supply of provisions was not sent up. That may be the case if they were to remain there another year; but the same letter observes that what is sent away in the month of May seldom arrives in the trading country before the winter sets in. If this be a fact, then they have now near a twelve months' provision, and by sending up two or three canoes express (navigated by persons we can depend upon), these traders may be brought away, and their provisions will suffice at least until they can reach Detroit, where they can be in no danger of starving."

The British merchants of Montreal had already given decisive evidence of their loyalty upon more than one occasion. It was in no respect lessened by the arbitrary rule of the invaders. Accordingly we find James Stanley Goddard, a very noted trader, accompanied by Richard Walker, secretly leaving the town in March, 1776, and taking an active part in assembling a body of Indians to open the communication with the upper posts, which defeated the Americans at the Cedars in May.

It was probably from the knowledge of their determined hostility, and in the hope of conciliating them, that the recently appointed commissioners of Congress in Canada, among whom Benjamin Franklin was the ruling spirit, were then induced to reverse Wooster's policy. Shortly after their arrival in the province they announced that they "had directed the opening of the Indian trade and the granting of passports to all who shall enter into certain engagements to do nothing in the upper country prejudicial to the continental interests."

In a few weeks, however, the problem was solved for them by the entire reconquest of the province by Sir Guy Carleton, and trade resumed its accustomed course.

The fort at Oswegatchie had never been a favourite resort for traders. In May, 1778, detachments from this post and Niagara took possession of Deer or Buck Island at the foot of Lake Ontario. Henceforth it became known as Carleton Island. Hamilton and Cartwright established a trading station there and others followed. The importance of Oswego had steadily waned for years, and in July, 1778, the last remaining trader was driven off by a raiding party from Fort Stanwix. This incident was described in a letter of the 2nd August of that year from Archibald Cunningham, factor at Carleton Island, to Francis Goring.

"L. Parlow was sent by our commandant with a party to bring off his family and effects from Oswego, but on his arrival found that his government had about fourteen days before been burnt by the rebels, who took most of his effects, even the handkerchief from his lady's neck, and his son prisoner, yet he had the good fortune to find they had missed his bag of piasters, two milch cows, his wife and two daughters, with which he made his retreat to this place."

In the autumn of 1778 a military post, which received the name of Fort Haldimand in honour of the governor, was constructed on the upper end of Carleton Island. It was provided with wharves and storehouses and was designed as an *entrepôt* for the supply of all posts on the lakes. Stores of all kinds were brought up in batteaux from Montreal and landed here until they could be reshipped in sailing vessels for Niagara. Its position rendered it tolerably secure from attack, and some of the armed ships on Lake Ontario were usually laid up here for the winter. A quantity of land was brought under cultivation for the supply of the garrison, fruit trees were planted and the place rapidly developed into a trading station of considerable importance.

Trading houses existed for some years, between 1770 and 1780, at Pinewood Creek and Piminiscotyan Landing on the north shore of Lake Ontario, and occasionally a stray trader wintered in the Missassauga villages at Rice Lake and Toronto. A man named Cowan is said to have permanently established himself at Matchedash Bay as early as 1778.

The great difficulties attending the transportation of supplies impelled General Haldimand to attempt the improvement of the navigation of the St. Lawrence by the construction of a series of short canals in the vicinity of Coteau. These works were carried out under the superintend-

ence of Captain Twiss and Lieut. Glenie, of the Royal Engineers, in 1780 and 1781.

Thirty years later, the latter officer referred with pride, in a letter to Lord Bathurst, to his share in the construction of the Coteau canal.

"At Coteau there is a violent rapid where formerly the loaded batteaux in going up the river were obliged to be unloaded and every article had to be carried across a neck of land composed of limestone. I cut a canal through it and erected a storehouse on one side. It was the first canal with locks ever made in Canada."

The volume of trade at Niagara rather increased than diminished in consequence of the war, although the quantity of furs brought in was much less than formerly. There are no statistics available of the amount of merchandise and peltry passing the portage around the falls, but it was undoubtedly large.

A letter from General Schuyler, dated in February 1776, contains the statement that "Mr. Francis Phister, a half-pay lieutenant in the Royal Americans who has bought an estate and resides in this county (Albany), has a contract to supply the carriages on the Niagara Carrying Place, by which, I have been informed, he clears between three and four hundred a year." At the same time Philip Stedman had acquired a monopoly of the right of transporting all goods over this portage.

The traders frequenting the country of the Six Nations took sides in the contest as their inclinations or interests dictated, the great majority however remaining faithful to their allegiance. We hear on the one hand of "Peter Kyckman, an Albany trader," acting as a spy for General Schuyler at Niagara and regularly sending him intelligence, and on the other, that "John Johnson, formerly an Oneida trader," was established by Colonel Butler as his resident agent among the Senecas near Canandaigua Lake, and that despite habits of dissipation he rendered important services.

The official correspondence of successive commandants of Fort Niagara with General Haldimand, and a stray bundle of letters from Francis Goring, furnish occasional glimpses of the mercantile activity of that post.

Colonel Bolton wrote on the 10th of November, 1777 :—

"Governor Hamilton writes me that the merchants at Detroit have come to an agreement to build a wharf at Fort Schlosser, and a store at the water's edge 60 x 30, and also another of the same dimensions at the landing place."

December 14th, 1777.—"This place is quite lumbered with merchants' goods, which the badness of the season prevented Mr. Stedman from taking over the landing place."

April 7th, 1778.—"Mr. Pollard, on account of his bad state of health, intends quitting business as a merchant."

May 10th, 1778.—"I have always endeavoured to forward the merchants' goods by rotation, but they are frequently sent here without a single person to take care of them, and you cannot conceive what a plague and trouble I met with last year, every place in this fort was lumbered with their effects and the vessels obliged to navigate the lakes until the 30th of November."

May 12th, 1778.—"I have drawn a bill for £14,769 9s. 5d. in favour of Mr. Pollard for sundries furnished the savages, which Major Butler thought absolutely necessary, notwithstanding all the presents sent to this post last year."

Sept. 8th, 1778.—"Last winter this place was quite lumbered with merchandise; even the officers' barracks was filled with goods, as I would not allow any to remain at the landing during the winter, but ordered the soldiers of the garrison to bring down twenty-six batteau loads. Your Excellency very justly observes that the eagerness of the merchants in forwarding such immense quantities of merchandise may tempt the rebels to draw near this post, and I am astonished that last year, when there were goods to the amount of £50,000 on Deer Island, no attempt was made to destroy them; where they intend to lodge their goods this winter I know not, for it will be absolutely impossible to get half of them over this year on account of the provisions ordered for the upper posts."

Nov. 11th, 1778.—"Major Butler is building barracks on the opposite side of the river, and Captain Matthews is erecting a strong log-house to contain forty or fifty men at the upper landing."

R. Hamilton to F. Goring, 29th June, 1779.—"The general will allow no passes to any of the upper posts. He tells Mr. Matthews that when the commanding officer at Niagara writes for goods he will allow them to go forward."

Bolton to Haldimand, 6th July, 1779.—"The works are going on with all the expedition possible, considering the number of men here and the difficulties we have to encounter bringing home fire-wood, cutting logs, and batteauing provisions up to the landing, etc., at which place, as well as Fort Schlosser and Fort Erie, we have a great quantity of merchants' goods, owing to the large vessels being employed at Detroit this summer."

Goring to R. Hamilton, 14th September, 1779.—"Tobacco is a very scarce article at Detroit, and sells at from eight to ten shillings a pound. I have made out another Indian account for £5,808 17s. 9½d., which is now gone to the Indian country to be certified."

Bolton to Haldimand, 16th September, 1779.—"I have ordered the Haldimand to bring down 48 batteau loads of merchandise from the landing, and have sent orders to the officers at Fort Erie and Schlosser to hold themselves in readiness to join this garrison."

Memorandum on the fur trade, 1780.—"The least stop to sending goods into the Indian country may be prejudicial to the interests of those who trade there. The Indians are so long accustomed to the use of blankets, leggings, and other comforts that they are absolutely necessary to them. The advancement of trade will ever be the first object of attention; unhappily the traders do not consider the preservation of the country necessary to this end, but blindly grasp at all risks, the present means of making fortunes. If the goods they send into that country are disposed of, their sole purpose is accomplished. Under the pretext of the fur trade, an incredible number of persons since the beginning of the rebellion has been required, many more than before, though the Indians being employed in the war necessarily hunt less. The fur trade is not the object, it is the great consumption of rum and Indian presents, manifested by the enormous sums drawn for on those accounts by Government, purchased at a most exorbitant rate from traders."

Goring to Samuel Street, 15th March, 1780.—"Liquors are very scarce here and at Detroit. Lay in as large a stock as our circumstances will allow. Blankets are very scarce; Col. Johnson has sent down orders to buy up all the blankets in Canada. Be sure not to forget to bring something for the belly, as provision is very scarce here. If you could procure two or three cags of corned beef, I believe it will answer. We have experienced the longest and coldest winter ever known here. The river was frozen over from the 7th January to the 1st March, and passable for horses and sleds almost the whole time, which has put us back in our building, the snow being two and three feet deep in the woods; however, the weather has for this week past been milder, in which time we have got all the timber out and only wait for favourable weather to raft it home. Mr. Stedman has promised Col. Johnson all the boards he could cut. The spot is not fixed on as Col. Bolton has not dared to show his nose out this winter."

Bolton to Haldimand, September 14th, 1780.—"You have also, sir, a journal of the party I sent to Lake Huron by way of Toronto."

It is to be regretted that this journal has not been preserved either in the Haldimand collection or among the Colonial Office records.

"Return of batteau loads of merchandise ordered by merchants at Detroit for 1780—90 loads."

Col. Watson Powell to Haldimand, 25th May, 1781.—"The Detroit merchants having no cover for their goods at Fort Erie I desired the engineers to mark out ground for a storehouse there and have given leave to Mr. Garner who came from England last summer, to build one.

Walter Butler to Capt. R. Matthews, 2nd August, 1781.—"The rangers are made drudges of, for Mr. Stedman and others."

Col. H. Dundas to Major R. Matthews, 13th September, 1782.—"Mr. Thompson, a merchant here, has applied to me for leave to send a person to Toronto, opposite this, to trade with the Indians. I told him I could not grant his request until His Excellency's pleasure on that head was known. I must observe that Mr. Thompson is a very modest sort of man and has suffered much from the rebels on the Mohawk river."

Extract from the humble address of farmers residing on the west side of the river Niagara, 1783.—"We have no objection to furnish the garrison at a reasonable price what quantity they may want, fixed by the commanding officer, at the same time we beg leave to sell to the merchants and others at the price we can agree on from being obliged to pay merchants their own price for everything we want."

Haldimand's letters show that he kept a watchful eye upon the conduct of the traders everywhere, and that he was always anxious to promote the true interests of commerce.

In April, 1781, he wrote Capt. Sinclair, lieutenant-governor of Mackinac. —"The season for the departure of the trading canoes bound up the Grand River being arrived, and the traders very solicitous for their passes, I am obliged to gratify their wishes, although I should have been glad to have heard from the Indian countries before they set out, which the backwardness of the season has prevented. I have, however, taken the necessary precaution of laying on them the strictest injunctions of submitting implicitly to such restrictions as from circumstances unknown here and the good of his majesty's service you may see fit to lay them under, and I must earnestly desire that you will pay the utmost attention to the respective destinations of these traders who, I cannot help thinking, under a pretext of exercising the fur trade, abuse the indulgences granted them for that purpose, and do many things injurious to the king's interest and likewise to the reputation of the trade. I am not so well

informed of the complicated circumstances attending that remote trade as I could wish, or as it is necessary I should be. I enclose to you a few hints and memorandums upon that subject, and I request you will with your leisure correct them and suggest to me all such as your long experience and knowledge of that country, and your late observations may have furnished you with, that I may be the better enabled to give that encouragement I wish to so essential a branch of trade, but at the same time carefully avoid giving latitudes, which in the present state of affairs might tend to prejudice what we most want to preserve. So heavily do the traders complain of the losses they have sustained that to content them I have given passes for 100 canoes upon the conditions I have already mentioned to you, that whenever you see the least prospect of danger you will not suffer a single article to be sent."

Again, on the 31st of May, he said: "The Pottowatamies and all other Indians at trading posts may be informed that if they ever again permit the enemy to pillage the traders they may rest assured that a trader will never be permitted to return to them—they being on their hunt or any other evasive argument will not be any more admitted as an excuse. If traders are sent amongst them at their request, it is their duty to protect them, and they must never leave their villages defenceless. If they keep out proper scouts and support that intercourse with each other which the times require, they can never be surprised. Much credit should be given to the Indians towards the Mississippi, who have so faithfully protected their traders."

In August, 1782, the reckless misconduct of some traders caused the adoption of more stringent regulations than ever before.

"As the traders will not conform to regulations established for the last year, recommended by his excellency the governor-general, although their passes oblige them to conform to such regulations, it is not judged necessary to stop trade on account of the obstinacy and demerit of the trader; therefore another scheme is proposed to them to avoid the ruin of the most worthy. Goods will be permitted to go to a certain number of wintering grounds. Proper people will be chosen by the lieutenant-governor for these places. The others must lodge their goods in the fort under a proper person also chosen by the lieutenant-governor, and they will be permitted to take an equal quantity out weekly, giving bond that they will sell none but by retail at the post."

During the same summer a commission composed of Lieut.-Col. Henry Hope, Sir John Johnson, and James Stanley Goddard, was sent to Mackinac to inquire among other things into the condition

of the Indian trade and the state of the military posts on the lakes. They left Montreal on the 21st of August and arrived at their destination on the 15th of September, having been delayed for three days by high winds on Lake Huron. Their course was described by Hope in these terms:—"Up the Grand River (Ottawa) from Canesadago to Matouan (where we quitted it), 117 leagues with 16 portages; up the Little River to the entrance of Lake Nipissing, 18 leagues with 15 portages; across that lake 12 leagues; down the French River, 25 leagues with 3 carrying places, and across Lake Huron to the Island of Machilimakinac 79 leagues; the whole making 251 leagues with 34 carrying places, after which, when I observe to your excellency that the shallowness of the water and rapidity of the current in these rivers are such as to render it absolutely impossible to navigate them in any other craft but bark canoes, it is of course unnecessary almost to add that this communication can serve no other military purpose than to forward expresses to the upper country, or perhaps to throw a very small reinforcement of men into either of the posts of Machilimakinac or Detroit upon emergency, in case of any part of the other by the lakes being intercepted for a time."

He returned by way of Niagara and examined the conditions, terms, and mode of transport across that important carrying place. "On the 11th of October arrived at Carleton Island. I embarked in a batteau next morning and after visiting the post of Oswegatchie and seeing those very ingenious and useful cuts and canals that have been made to facilitate the navigation up these amazing rapids at Coteau du Lac and some other adjacent spots, the current brought me down to Montreal in something more than 48 hours, though a distance of near seventy leagues, and which to ascend with loaded batteaux even in the longest days of the summer season seldom takes less, I am given to understand, than fourteen days and at this time of the year nearer twenty."

The only trader who published a record of his experiences in the country to the north of Lake Superior during this period, that has come to my notice, was J. Long, whose travels appeared in 1791.

After serving seven years as an articled clerk to a Montreal merchant, Long entered the Indian department as an interpreter. In 1777 he left his employment and became a trader in the service of a northwest fur company at a salary of £150 per annum. Leaving Montreal on the 4th of May with two *canoes de maitre*, each manned by ten Canadians, he arrived at Mackinac on the 17th of June. He then proceeded to Sault Ste. Marie and on the 4th of July reached Pays Plat, where his goods were unpacked and made into smaller bales, as it was estimated there were a hundred and eighty carrying places to cross before arriving at

the place where he intended to winter. Twenty Indians were then hired to assist them in passing La Grand Cote de la Roche, the steep and difficult portage at the mouth of the Nipigon. The journey to Lake Alempigon or Nipigon was accomplished with ease. On the first of August he began his march for Sturgeon Lake, accompanied by fifteen Indians, and on the 25th of September arrived at Lac La Mort (Dead Lake), where he proposed to remain during the winter. In January, 1778, he ran short of provisions and was obliged to remove to Lake Manantoye, where Mr. Shaw, a brother trader, was wintering. The severity of the season was so great that James Clark, a trader in the employ of the same company, had five of his men starved to death at Lake Savan. Between Red Lake and Salt Lake, Long states that there were "fourteen portages and twenty-two creeks." From the latter to Cariboo Lake it was eight days' march and there were five creeks and three portages to cross. At this lake a French trader had been settled some years before, but Long found it deserted. The Indians estimated the distance to Lake Schabeechevan (Weed Lake) at ten days march across thirteen portages and the same number of creeks. The trail to Lake Arbitibis passed through three small lakes, and over five portages and eight creeks, and thence to Crow's Nest Lake was a short journey. In April, Long received a letter from one Jacques Sameron, a trader in charge of a party in the service of his employers that had wintered at Lake Schabeechevan, informing him that he intended "to make a *grand coup*," by selling his packs to the Hudson Bay Company and embezzling the proceeds. In the hope of preventing this act of dishonesty, Long made a forced march to Sameron's station only to find on his arrival that the delinquent was several days' march on his way to Hudson Bay. On the 23rd of May he finally abandoned his station at Lac La Mort and returned to Pays Plat with 140 packs of furs.

Remaining there only five days to deliver his furs and receive supplies Long set out on his second expedition, proceeding by the river La Pique, Portage La Rame Nipigon River, Great Crow's Nest Lake and Skunk Lake to Lake Schabeechevan, where he built a house. During the same winter Mr. Fulton established a post at Shekarkestergoan. Joseph La Forme, who led a party to Lac Le Sel, was killed by an Indian, and Long took his men into his own service. In February, 1779, he was visited by a Hudson Bay Company's agent from Fort Albany, which is described as "thirty days' march distant from his station at Lake Schabeechevan, over ninteen portages and creeks, and fourteen rapids." In the spring, Long returned to Mackinac, where he became the adjutant of a militia company formed by the fur traders for the defence of that place.

In that capacity he accompanied the expedition to Prairie du Chien next year.

The formation of the Northwest Fur Company in 1783, marks the beginning of a new era in the Canadian fur trade. The number of "adventurers" engaged in the Northwest trade had by this time been reduced by keen competition, mismanagement, or ill-success to twelve. Among these, the brothers Benjamin and Joseph Frobisher were particularly distinguished by their activity and energy. When the treaty of peace was published and it became probable that the Grand Portage would be found to lie within the United States, they at once began explorations for a new route within British territory, in which they succeeded beyond their expectations. They next took an active part in the organization of a company to include all the traders still concerned in that business. "Being convinced by long experience of the advantages that would arise from a general connection not only calculated to secure and promote their mutual interests but also to guard against any encroachments of the United States on the line of boundary as ceded to them by treaty from Lake Superior to Lake du Bois, they entered upon and concluded articles of agreement under the title of the North-west Company, of which we were named directors, dividing it into sixteen shares, of which each proprietor holds a certain number proportionate to the interest he then had in the country."

With this event the first period of the history of the fur trade naturally terminates.

Navigation of the Great Lakes—1760-1782

Much of the commerce on the lakes continued to be carried on in batteaux or large canoes, although these were being gradually superseded by sailing vessels. The attendant perils of this kind of navigation were not restricted to the danger of shipwreck and drowning. The Annual Register for 1770 records this ghastly tale.

"Letters from Detroit by Monday's New York mail inform us that several boats with goods had been seventy days in crossing Lake Erie, in which time the distress of the people was so great that they had been obliged to keep two human bodies which they found unburied on the shore, in order to collect and kill the ravens and eagles which came to feed on them, for their subsistence. Many other boats have been frozen up within forty miles of Detroit and several traders' small boats with goods had been lost."

On Lake Ontario, even at that date, much of the transportation was done in the "king's ships."

Under date of the 29th of May, 1767, the Register notes, with evident satisfaction, the growth of shipping on that lake.

"There are now four brigs from forty to seventy tons, and sixteen armed deck-cutters on Lake Ontario; by this means the navigation of the great lakes and a mart of trade will soon be established equal to that of the Caspian Sea."

An official return of the 30th of July, 1778, gives a list of all vessels built on the lakes since the year 1759.

On Lake Ontario.

Scow Mohawk, of 16 guns, built at Niagara in 1759 and 1760, cast away in 1764.

Ship Onedago, of 18 guns, built at Oswego in 1760, cast away in 1764.

Sloop Missassago, of 8 guns, built at Oswego in 1760, cast away in 1765.

Schooner Mercury, of 6 guns, built at Oswego in 1760, laid up and decayed.

Scow Johnston, of 12 guns, built at Oswegatchie, taken from the French in 1760, cast away in 1764.

Schooner ——, of 12 guns, built at Oswegatchie, taken in 1760, cast away in 1761.

Schooner ——, of 6 guns, built at Oswegatchie, taken in 1760, cast away in 1761.

Schooner Brunswick, of 10 guns, built at Oswego in 1765, in service till decayed.

Scow Haldimand, of 18 guns, built at Oswegatchie in 1771, still in service.

Scow Seneca, of 18 guns, built at Oswegatchie in 1777, still in service.

Sloop Charity, of six swivels, built at Niagara in 1770, cast away in 1777.

Sloop Caldwell, of two guns, built at Niagara in 1774, still in service.

On Lake Erie.

Sloop ——, of 8 guns, built at Navy Island in 1763, cast away in 1764.

Schooner Victory, of 6 guns, built at Navy Island in 1763, laid up and burned by accident.

Schooner Boston, of 8 guns, built at Navy Island in 1764, laid up and burned by accident.

Schooner Gladwin, of 8 guns, built at Navy Island in 1764, in service till decayed.

Sloop Charlotte, of 10 guns, built at Navy Island in 1764, in service till decayed.

Schooner Gage, of 16 guns, built at Detroit in 1773, still in service.

Schooner Dunmore, of 12 guns, built at Detroit in 1773, still in service.

Schooner Hope, of 4 swivels, built at Detroit in 1771, still in service.

Sloop Angelica, of 4 swivels, built at Detroit in 1771, still in service.

Sloop Chippawa, of 4 swivels, built at Pine River in 1769, cast away in 1775.

Schooner Faith, of 4 swivels, built at Detroit in 1774, still in service.

Sloop Felicity, built at Detroit in 1775, still in service.

Sloop Adventure, of 4 swivels, built at Detroit in 1776, still in service.

Sloop Wyandot, on the stocks.

Paquet, on the stocks.

Scow Ottawa, on the stocks.

On Lake Huron.

Sloop Welcome, built at Machilimakinac in 1777, still in service.

On Lake Michigan.

Sloop Archangel, built at Detroit in 1774, still in service.

The manner in which these vessels were employed was described by Col. Bolton in a report of the 10th of May, 1778.

"The scow Haldimand, the scow Seneca, the sloop Caldwell and one more of the same burthen very useful for Lake Ontario. The schooner Gage, the Ottawa (when built) for Lake Erie. The schooner Hope, the schooner Faith, from Fort Schlosser to Fort Erie. The schooner Dunmore for Lake Huron. The sloop Felicity not wanted in the service. The sloop Angelica not worthy of repairs. The sloop Welcome, the property of Mr. John Askin. The sloop Archangel, the property of Messrs. Barth & Son, Lake Michigan, useful by report of Major De Peyster. The Wyandot, packet, burthen 30 tons, when launched to be employed from Detroit to Fort Erie."

A memorandum from Capt. Andrews of the same date requested permission "to enlarge Niagara Navy Hall wharf, there being too little water at the present wharf to careen large vessels at, and it being too small for three vessels to winter at; to build a vessel at Niagara in lieu of the Haldimand, informed that she cannot last above another year, therefore no time should be lost to provide timber; and to erect barracks at Navy Hall for the seamen, a rigging and a sail loft absolutely necessary to fix rigging and make sails in the winter."

The vessel built to replace the Haldimand was the ill-fated schooner Ontario, which foundered with all on board on her first, voyage in October, 1780.

Of this vessel Glenie remarks, "I told Capt. Shank when he was building the Ontario that he was making her too flat-bottomed and that she would overset. Accordingly she overset a few leagues from Niagara, and Col. Bolton and 132 others perished in her."

From another return of the 1st of December, 1782, I extract the following statement of ships then on the lakes.

ON LAKE ONTARIO.

Haldimand, 150 tons, 14 guns, 35 men.

Seneca, 130 tons, 18 guns, 35 men.

Mohawk, 50 tons, 5 guns, 14 men.

Caldwell, 37 tons, 2 guns, 14 men.

Limnade, 220 tons, 16 guns, 45 men.

Four scows.

ON LAKE ERIE.

Gage, 114 tons, 12 guns, 30 men.

Dunmore, 70 tons, 10 guns, 25 men.

Hope, 70 tons, 6 guns, 18 men.

Wyandot, 37 tons, 10 men.

Faith, 37 tons, 10 men.

Angelica, 59 tons, 12 men.

Felicity, 45 tons, 12 men.

Adventure, 18 tons, 8 men.

Welcome, 136 tons, 35 men.

The new vessel Rebecca, 136 tons, 35 men.

A new vessel built at Mackinac.

During this period, and in fact for a full half century, from 1763 until his death at a very advanced age in 1812, the senior officer on Lake Erie was Captain Alexander Grant. According to the authoress of "Letters from the Mountains," he was a younger brother of the house of Glenmoriston in Inverness-shire. In 1792, Grant was appointed a member of the Executive Council of Upper Canada, on which he continued to serve to the end of his life. As president of that body in 1805, he became administrator of the government of the province upon the death of General Hunter.

NOTE ON A MEMORABLE EPOCH IN CANADIAN HISTORY.

By Sandford Fleming, LL.D., C.M.G., Etc.

(Read 11th February, 1893.)

On the 22nd of July, 1793, a traveller from Montreal reached the shores of what is now the western province of Canada. This traveller was the first civilized man who had traversed the continent between the Atlantic and Pacific oceans in any latitude. In a few months a century will have elapsed since he first looked upon the waters of the Pacific.

On the 20th of July, 1871, seventy-eight years after the consummation of the first transcontinental journey, British Columbia, only a few years emerged from the wilderness, was included in the Canadian Confederation. On that day Canada attained magnificent geographical proportions; the Dominion extended across the entire width of the northern continent. There are not many of our people who are capable of grasping the immensity of this extent or who are impressed with the full value and importance which this acquisition confers on our country. Even the best informed amongst us who contemplate the vast breadth of our possessions can form but imperfect theories of the immeasurable natural wealth it contains, and there are few who would venture to assign a limit to the national prosperity which in the future we may enjoy.

No single division of the British Empire wherever situated, in the Indian seas, in the south of Africa, or in the Australian antipodes, can compare with the Dominion in geographical extent. Of all countries owing allegiance to Queen Victoria no single land can more truly claim the appellation "Greater Britain."

The eve of the completion of a century since the greatest triumph of the famous traveller, Sir Alexander Mackenzie, suggests that we may recall his life and labours, and consider the results which have sprung from his remarkable discoveries or which have been influenced by them.

In 1789 Sir Alexander Mackenzie, then about thirty years of age, discovered the great river which bears his name, and descended its waters to the Arctic Ocean. He thus established the important truth that the northern part of this continent extends unbroken to the Arctic circle. Three years later he undertook his more famous expedition with the

design of penetrating the Rocky Mountains and pursuing his journey in a westerly direction until he found the Pacific. By the discoveries which Mackenzie effected on these expeditions new realms were brought within the influence of the Empire, and the great fact became established that the shores of the vast territory, now the Canadian Dominion, are buffeted by the billows of three oceans—the Atlantic, the Pacific and the Arctic.

The world is familiar with the story of the persevering and heroic efforts to find a north-west passage. We all know that many lives and an enormous amount of treasure have been sacrificed in fruitless attempts to discover a navigable channel in the northern hemisphere, from Europe to Asia. It is not so well remembered, however, that three centuries back the "North-West Passage" was alleged to have been found. I allude to the claim advanced by Juan de Fuca, that he had discovered open water through the continent and that a ship could pass in a given number of days from one ocean to the other. He set forth the character of the discovery claimed by him and described it as extending from the Pacific coast in the latitude of British Columbia on the west to Hudson Strait on the east, and that it was an open waterway generally direct in its course, with a width ranging from 30 to 40 leagues and upwards.

Belief in the alleged discovery among cartographers appears to have been universally entertained. De Fuca promulgated the statement in 1592, and maps published by the French and English Royal geographers in 1752 and 1768 show the defined passage I have described. The whole turned out to be a pure fiction. The first consequence of Mackenzie's travels was to prove irrefragably the non-existence of De Fuca's channel and to sweep away all belief concerning it. The only trace left of the geographical fraud is the name which is still retained by the inlet extending between Vancouver Island and Washington Territory, leading from the Pacific to the Gulf of Georgia. We are unable at the present day to estimate the great influence exercised on geographical science by this disclosure. The facts brought to light by the discoveries of Mackenzie distinctly established beyond all question that the shores of the continent on the Pacific side continue northward until they terminate within the Arctic circle.

An account of Mackenzie's travels was published in 1801. We possess in this volume a detailed narrative of his voyage from Montreal through the continent in 1789, 1793 and intervening years. The maps which accompany the volume present the true position of the lakes and rivers which he discovered ; they likewise show the route he followed through

the mountains of British Columbia to the sea. These publications, the record of years of labour, set at rest the pretensions of De Fuca and demonstrate the absolute impossibility of any practicable passage for ships between the Atlantic and the Pacific through the northern continent; to attain which passage so many futile attempts have been made, and which have occupied so long and so fruitlessly the attention of governments and called forth the enterprising spirit of so many navigators.

On his second voyage, commenced early in 1792, Mackenzie left Montreal and penetrated to Fort Chipewyan on Lake Athabasca, reaching the latter in October the same year. He had started with the design of finding a way through the Rocky Mountain range to the western coast. Whatever difficulties might present themselves he had resolved if at all possible to reach the Pacific Ocean. Without more delay than was necessary in preparing for the journey to the westward, he left Fort Chipewyan and proceeded up Peace River until his progress was impeded by ice. He was then forced to remain winter-bound until the following spring.

On May 9th, 1793, when the river opened, the voyage was resumed. The expedition followed the Peace River to the Forks; one branch is named the Finlay, the other the Parsnip, the latter of which he traced nearly to its source. Arrived at this point, Mackenzie abandoned these waters and proceeded overland, cutting a passage through the woods so that he could carry the canoe. He continued by the trail formed until he reached a stream, the waters of which were flowing in the opposite direction to the current he had left on the eastern slope. This led to a great river called by the Indians of the locality Tacoutche; it is now known as the river Fraser; Mackenzie formed the opinion that it was the upper waters or a branch of the Columbia which river is known to discharge into the Pacific in about latitude forty-six. This was the common belief until 1808, when Simon Fraser descended the Tacoutche to the Gulf of Georgia, proving it to be an entirely independent stream, a discovery held to be so important that the name of Fraser was given to the river and which by common consent it still retains in honour of the man who first followed it to its mouth.

Mackenzie embarked in his canoe, floated down the Tacoutche five days; the party met Indian tribes, with some of whom difficulty was experienced. He learned from the Indians that the river they were descending was of great length and its navigation attended with many perils; his men became discouraged and mutinous; under the circumstances in which he was drifting he determined to abandon the attempt

to descend to the mouth of the supposed Columbia, and resolved to make the effort to reach the sea by a land route. In order to find the Indian trail which he learned would conduct him to the Pacific, the explorer had to turn back and ascend the Tacoutche for some distance. Although depressed at what he held to be a misfortune, this change of route led to the accomplishment of his purpose and enabled him to reach the sea in the space of sixteen days after leaving the main river. Mackenzie again had adventures with the different Indian tribes; he and his men underwent much hardship, and from the state of their provisions were placed on short allowance. The traveller, however, finally attained his long cherished purpose, he reached the shores of the Pacific overland from the Atlantic by a journey through the northern continent of such extent that it must be counted by degrees of longitude. The whole country he traversed is now embraced within the Dominion of Canada.

Every page of Mackenzie's journal shows that his explorations were not effected without constant toil and privation. The discouragements arising from the difficulties and dangers he experienced, and they were incessant, had no influence on his cool determination and dauntless spirit. The many tedious and weary days of physical labour and mental strain, the gloomy and inclement nights to which he was constantly exposed, were not, however, passed in vain; he gained his great reward in the knowledge that he had in the interest of his country attained the object of his long premeditated design; he had penetrated a vast continent for the most part in a condition of wild nature; he had overcome the obstacles imposed by rapid rivers previously unknown, by rugged mountain ranges, by distance, by intervening forests and by extremes of a variable climate. From time to time obstacles presented themselves in the enmity of hostile native tribes, who had never before looked upon the face of a white man, but on the day he arrived at the Pacific coast he had the unqualified satisfaction of feeling that his undertaking had been crowned with complete success. His discoveries settled the dubious point of a practicable north-west passage through the temperate zone; he set at rest forever this long agitated question with the disputes which had arisen regarding it; he added new regions to the realm of British commerce, and in doing so extended the boundaries of geographical science. He did much more, although the full effect of all he had accomplished was unknown to him, we can now, however, attribute to the enterprises to which Mackenzie's discoveries led, that the territory west of the Rocky Mountains became a British province; indeed it is problematical whether in the absence of his discoveries any portion of that country would at present constitute part of the Dominion of Canada.

Many, I think, will agree with me that among the men who have distinguished themselves in the annals of our country there is no name more illustrious than that of Sir Alexander Mackenzie. In my judgment there is no event which we can point to with greater interest and satisfaction than the completion of his perilous enterprise on that day, July 22nd, 1793, when, with his Canadian comrades, he floated in a small canoe on the tide-water of the Pacific.

THE PRESENT ASPECT OF THE OSSIANIC CONTROVERSY.

By Rev. Neil MacNish, B.D., LL.D.

(Read April 1st, 1893.)

James MacPherson was the translator of the poems of Ossian. He might with all fairness have applied the well-known words of Horace to himself, *Exegi monumentum aere perennius:* so wonderful and far-extending was the impression which the poems of Ossian in their English dress speedily made in the literary world, and so firm is the position which, after the lapse of more than a hundred years, those poems occupy in the literary annals of mankind. Professor Blackie thus writes: "On the 2nd day of October, 1759, Dr. Carlyle, of Inveresk, came from the neighbourhood of Dumfries to Moffat and found there John Home, the author of "Douglas," with whom he took up his quarters for the day. In the course of conversation, Home mentioned to Carlyle that he had long been on the scent for some old Gaelic poems which Professor Ferguson, an Atholl man, informed him were current in the Highlands, and that he had at last stumbled upon a person who could give him some definite information on the subject. This was a young man, by name James MacPherson, from the district of Badenoch, in the centre of the Highlands, of good family and well educated, an excellent classical scholar and no stranger to the Muses, and who was at that time acting as tutor to young Graham of Balnagown, afterwards Lord Lynedoch. From this young man Home had learned, that he had in his own possession some of those old poems, which Home eagerly solicited him to translate." MacPherson produced, after much solicitation, an English version of the "Death of Oscar," *Bas Oscair.* The poetical genius which that poem, even in its English dress, displayed, gave immense pleasure to Home and to Dr. Blair, who was then in the zenith of his literary fame. A small volume was subsequently published by MacPherson with the designation, "Fragments of Ancient Poetry collected in the Highlands of Scotland." The public interest in Gaelic poetry at once became deeper and wider, insomuch that the prominent patrons of literature in Scotland, Lord Elibank, Dr. Robertson, Mr. John Home, Sir Adam Ferguson, Dr. Blair and others, determined to send James MacPherson on what they termed a poetical mission throughout the Highlands, for the purpose of collecting all the Ossianic poetry that could be procured, and thus of rescuing from oblivion

poems which could not be otherwise than valuable and entertaining in an eminent degree. MacPherson, accordingly, entered on his labours in 1760 under the most favourable auspices. Wherever he went, in the prosecution of his laudable mission, he received kindly recognition and ready assistance. So successful were his efforts, and so indefatigable was his diligence, that in 1762 he published in one volume his translation of Fingal and sixteen other poems; and that in 1763 he published another volume containing Temora and five other poems. As Dr. Clerk remarks, "The publication of these poems excited the wonder of literary men throughout Europe. They were translated into French, German, and Italian, and speedily ran through various editions. They commanded the admiration of Napoleon, of Goethe, who in his 'Werther' gives 'the Songs of Selma,' and of Schiller, who speaks of the 'great nature of Ossian.'" The Abbé Cesarotti, a professor in the University of Padua, who translated the poems of Ossian into Italian, thus lucidly sets forth the general impression which those poems made. "The appearance of the poems of Ossian was a phenomenon so unexpected and extraordinary, that it is not surprising they should have excited, during even a period of enthusiasm, doubt and astonishment. In a country scarcely known to history, mountainous, difficult of access and almost constantly shaded with mists; in a state of society the most unpolished, wretched and barbarous, without trade, without learning, without arts and sciences, how could such a transcendent genius arise who may be said to dispute the palm with the most celebrated poets of the most civilized nations, and with those even who for so many ages have been considered models of art? This novelty was too much at variance with the generally received opinion, to be implicitly believed without controversy. Was there truly an Ossian? Was he really the author of the poems which have been published under his name? Can this be a spurious work? But when? How? By whom? Those are questions which for a length of time have agitated and divided public opinion in England, while Europe regarded with veneration this surprising phenomenon." Davies, the famous Welsh scholar, after examining the *Claims of Ossian* with critical severity, was led thus to write: "These poems do credit to Caledonia. The Gaelic originals constitute a splendid monument of its language. The Fingal and Temora, upon subjects so interwoven with the feelings of the people, set this corner of the island far above poetic competition, not only with any Celtic tribe, but we may almost say with any nation in Europe."*

There were not wanting those who maintained, that it was impossible

* The Claims of Ossian, p. 326.

for poems such as those that had been ascribed to Ossian, to be handed down during many centuries, mainly by oral tradition. Johnson and Hume and Laing were conspicuous among those who opposed the unambiguous asseverations of MacPherson regarding the poems of Ossian and the manner in which he came to obtain possession of them. Those influential writers went the length of imputing very unworthy motives to MacPherson, and of casting severe aspersions on his literary honesty. In writing to Dr. Blair, Hume makes use of this caustic language: "You need expect no assistance from MacPherson, who flew into a passion when I told him of the letter I had written to you; but you must not mind so strange and heteroclite a mortal, than whom I have scarce ever known a man more perverse and unamiable. He will probably depart for Florida with Governor Johnstone, and I would advise him to travel among the Chickisaws or Cherokees in order to tame him and civilize him." There are not wanting witnesses to attest that the names of Fingal and his heroes were known long before MacPherson published his translation of Ossian. Barbour in his "Bruce," which was published from a MS. that bore the date 1491, makes a distinct reference to Fingal and Goll MacMorni—Gol MakMorn, one of his greatest heroes. In his Gaelic edition of the Psalms of David, which was published in 1684, Kirke makes special mention of Fingal in the author's address to his book. Bishop Carswell of Argyll published in 1567 his Gaelic version of John Knox's Liturgy—the first book that was ever printed in Gaelic In the preface, mention is made of those who are desirous of composing histories concerning warriors and champions, and Fingal the son of Cumhall, with his heroes. Dunbar mentions Fyn MaKowll and Gow MacMorn, *i.e.*, Fionn MacCaomhail and Goll MacMorni. The poems contained in the Dean of Lismore's book were collected by James MacGregor, Dean of Lismore, who died about the year 1551. The book in question is, therefore, more than three hundred years old, and a great portion of it may be assigned to as early a date as 1512. It contains twenty-eight Ossianic poems, extending to two thousand five hundred lines. It thus appears that, apart from the evidence which MacPherson was able to adduce, other writers of a much earlier date place the existence of poems belonging to the age of Ossian beyond a doubt.

It must be difficult for us, with all our modern appliances, to form a correct estimate of the retentiveness, which, under particular cultivation, the human memory is capable of acquiring. We learn, on the authority of Caesar, that the Druids of Britain were in the habit of committing to memory a great number of verses, insomuch that some Druids expended twenty years in completing their education. "They seem," he writes, "to have instituted this method for two reasons: because they would

not have their learning divulged to the vulgar, and lest those who learned by depending on their writings would be less assiduous in cultivating their memory, and because it frequently happens that by the assistance of letters persons take less pains in getting by heart or remembering." Grote informs us that there were educated gentlemen at Athens, who could repeat the Iliad and Odyssey by heart. In the preface to MacCallums' Ossian these very judicious remarks are made: "That until the present century almost every great family in the Highlands had its bard, to whose office it belonged to be master of all the poems of reputation in the country; that among these poems the works of Ossian are easily distinguished from those of later bards by several peculiarities in the style and manner; that Ossian has always been reputed the Homer of the Highlands, and all his compositions held in singular esteem and veneration; and that it was wont to be the great entertainment of the Highlanders to pass the winter evenings in discoursings of the times of Fingal and rehearsing these old poems, of which they had all along been enthusiastically fond." Than Dr. John Smith, the author of the Sean Dana, no one is entitled to greater respect in connection with the Ossianic controversy. He was born in the classical portion of the Highlands of Scotland, and his devotion to Gaelic and Gaelic literature was great and successful. He thus writes: "That there have been in the Highlands of Scotland for some time back a good many poems that were ascribed to Ossian, and repeated by almost all persons and on all occasions, is a fact so indisputable that nobody can be hardy enough to deny it. There is not an old man in the Highlands but will declare, that he heard such poems repeated by his father and grandfather as pieces of the most remote antiquity, long before the translation of them had been thought of. Bards who are themselves several centuries old quote them, imitate them and allude to them. Just now in the parish of Kilninver is a tradesman and poet of the name of MacPhael, whom I have heard for weeks together repeat ancient tales and poems—many of them Ossian's—from five to ten o'clock in the winter nights. In Glendonan, Kilchrenan Parish, is a family of the name of MacDugal; and at Arivean, Glenorchay Parish, another of the name of MacNicol, now almost extinct, both of whom were such senachies for some generations back, that they could entertain at this rate for a whole winter's season. What wonder if the poems of Ossian, where such was the custom, have been so long preserved." Those in our day who are disposed to call the authenticity of the poems of Ossian in question, must find very much to modify their opinion in the citations which I have made—citations which could easily be multiplied, in favour of the extensive prevalence of Ossianic poetry in the Highlands of Scotland during

the last century, and of the consequent facility that MacPherson must have experienced in collecting these poems, which, after he had collated and arranged them, he gave to the world as the poems of Ossian. Dr. Smith had abundant reason on his side when he thus wrote: "Within a century back, the Highlands of Scotland have undergone a greater revolution than for ten centuries before that period." With still greater reason, may we affirm that during the hundred and thirteen years that have elapsed since Dr. Smith published his Gaelic Antiquities, the Highlands of Scotland have undergone a great transformation by extensive emigration from many a strath and glen, so that comparatively imperfect facilities now remain for determining the manner in which Ossianic poems were respected, and preserved, and recited in the past. In a paper which Dr. MacNeill, the author of the Literature of the Highlands, read before the London Gaelic Society a few months ago, he asserts, that shortly after Dr. Clerk's edition of Ossian was published, Campbell, the author of Leabhar na Feinne and of the Popular Tales of the West Highlands, reviewed the work in question so ruthlessly and successfully that all the scaffolding of the authenticity, elaborately erected by Dr. Clerk and others, was laid in ruins. Dr. MacNeill further asserts, that MacPherson's Epics are the clever work of an exceedingly able but irascible Highland genius of the central land of the Gael, by whom they were composed and translated about one hundred and thirty years ago. He contends, without adducing sufficient evidence in favour of his averment, that the prominent Gaelic scholars of our day entertain a similar opinion concerning the poems of Ossian. So patriotic was the spirit which animated Mr. J. F. Campbell, and so enthusiastic was he in connection with the folk-lore and ancient poetry of the Highlands of Scotland, that his memory deserves to be kindly perpetuated. On one side of the monument which the Islay Association, with praiseworthy affection and liberality, erected to commemorate his many excellent qualities, these Gaelic words occur:

Iain og ile
Fior Ghaidheal, sar dhuin' uasal agus ard sgoileir
A choisinn urram agus clu anns gach cearn.
Ged nach do shealbhaich e oighreached aithrichean,
Shealbhaich e gradh nan Ileach,
Agus
Bithidh a chuimhne buan-mhaireann am measg
Chlanna nau Gaidheal.

He was the implacable opponent of MacPherson and Dr. Smith, and his excellent brother Donald Smith. He says "that MacPherson undoubtedly tried to deceive. The two brothers, John and Donald Smith, were

no deceivers, but their ideas as to authenticity differed from modern ideas on that subject." It is apparent, therefore, that Campbell made strong insinuations against the honesty and veracity of MacPherson and John and Donald Smith. A new edition of his Popular Tales of West Highlands was issued during last year. Were a critical examination made of his statements regarding the Ossianic controversy, it would be easy to show, that his views are at times contradictory, and that he could not have had a consistent theory to advance regarding the poems of Ossian. It was to himself that, so late as 1861, trustworthy correspondents sent such information as this from Bembecula and Skye: "A great variety of other poems that go under the name of Ossian's poems are commonly recited by the people. I have frequently questioned old men concerning the Fingalians in almost all parts of the Highlands, from Cape Wrath to the Mull of Cantyre. All had heard of them, and all firmly believed in their existence. Donald Stewart, Skye, 92 years of age, often heard the poems of Ossian. Every person knew them, most could recite them, and all admired them. Another old man had as much Ossianic poetry as would take him whole days in the recital, yet he could recite for whole nights together without the slightest hesitation. A certain schoolmaster affirmed that his father had more Ossianic poetry than all ever MacPherson translated, and that he himself when a boy could repeat what would form a tolerably sized volume. He was personally acquainted with many old men who could repeat lots of Ossianic poetry." Those citations, and citations of a similar kind, which could be made from Campbell's Popular Tales of West Highlands, are of themselves extremely valuable, because they allow us to understand that after the lapse of an entire century since MacPherson went on his poetical mission through the Highlands, Ossianic poetry still survived in the Western Isles, and among Gaels who never heard of MacPherson and who never read a verse of his Ossian. As, therefore, Ossianic poetry was found in large abundance in 1861, the question naturally presents itself: How very extensive must the same poetry have been in 1760. The inference is irresistible, that MacPherson could have found, and doubtless did find, abundance of Ossianic poetry in the Highlands, and that he had no occasion, even if he had the ability, to excogitate, or, in other words, to forge, the poems of Ossian.

That the power of oral tradition is very great, so far as the perpetuation of poetry is concerned, appears very clearly from the remarks which Max Müller makes with regard to the Finns. "The Epic songs still lived among the poorest, recorded by oral tradition alone. From the mouths of the aged, an Epic poem has been collected equalling the Iliad in length and completeness. Kalevala possesses merits not dissimilar

from those of the Iliad, and will claim its place as the fifth national epic of the world."*

Campbell may be regarded as the leader of those who in our day are opposed to the contention, that MacPherson gave to the world a *bona fide* translation of poems which he collected in the Highlands, and which he doubtless corrected and collated before he published them. Campbell's categorical averment is thus expressed by him: "My theory, then, is that about the beginning of the 18th century, or at the end of the 17th century or earlier, Highland bards may have fused floating popular traditions into more complete forms, engrafting their own ideas on what they found, and that MacPherson found these works, translated and altered them, published the translation in 1760, made the Gaelic ready for the press, published some of it in 1763 and made away with the evidence of what he had done when he found that his conduct was blamed. I can see no other way out of the maze of testimony." No unkindness is done to Campbell when it is stated, that his imagination must have acted no insignificant part in leading him to the conclusion which has been cited. It will be of advantage to advert to the evidence which remains with regard to the use that MacPherson made of the material collected by him in the Highlands. Dr. Blair states that "after MacPherson returned to Edinburgh he took lodgings in a house immediately below where Dr. Blair then lived, and that he busied himself in translating from the Gaelic into English." Dr. Blair goes on to say: "I saw him very frequently. He gave me accounts from time to time how he proceeded, and used frequently at dinner to read or repeat to me parts of what he had that day translated. Gentlemen who knew Gaelic looked into his papers and saw some that appeared to them to be old manuscripts."

Mr. Alexander MacAulay, Highland chaplain in Edinburgh at that time, thus writes: "I saw the originals which Mr. MacPherson collected in the Highlands. Mr. Fraser will assure you that he saw them likewise, and was frequently present with Mr. MacPherson when he was translating them, and no man will say that he could impose his own originals upon us, if we had common sense, and a knowledge of our mother tongue. The world may say of him and his translations what they please, but I am convinced for my part that I heard most of these poems repeated since I remember anything at all" The testimony of Mr. Lachlan MacPherson, of Strathmashie, is most valuable: "I assisted MacPherson," he writes, "in collecting the poems of Ossian, and took down from oral tradition and transcribed from old MSS. by far the greater part of

* Science of Language, 1st series; 317, 318.

these pieces he has published. Since the publication, I have carefully compared the translation with the copies of the originals in my hands, and find it amazingly literal, even in such a degree as to preserve in some measure the cadence of the Gaelic versification." It is unnecessary to adduce any other evidence in order to indicate, that MacPherson did in reality translate the poems of Ossian from poetical material that he was successful in obtaining in the Highlands; and that he did not depend, as his modern assailants persist in maintaining on very insufficient grounds, on his own imagination for the thoughts and sentiments which he arrayed in an English attire and to which he was pleased to give the appellation of the Poems of Ossian. Any amount of importance is attached by his modern adversaries to the fact, that MacPherson failed, as they contend, to disclose what his MSS. were, if any, and where he found them. A certain clergyman thus writes: "When MacPherson returned from his tour through the Western Highlands and Islands, he came to my house in Brae-Badenoch . . . He produced several volumes small octavo, or rather large duodecimo, in the Gaelic language and characters, being the poems of Ossian and other ancient bards. Many of these volumes were said to have been collected by Paul MacMhuirich, Bard Chlanraonuil, about the beginning of the 14th century. Mr. Macpherson had these from Clanronald. Clanronald told me that Macpherson had the Gaelic MSS. from him."

The statement of a writer in South-Uist is to the effect, that he saw Neil MacMurrich deliver to Mr. MacPherson a MS. containing the poem Berrathon, with three or four more MSS. Neil MacMurrich and his predecessors for nineteen generations were the bards and historians of Clanronald. The testimony of Malcolm MacPherson is to the effect, that he had a brother who was noted in the country for his knowledge of the poems of Ossian; that when James MacPherson was in the country, he employed himself for four days and four nights at Portree in taking down a variety of poems from his brother, and that the latter gave MacPherson a MS. in quarto and about 1¼ inches in thickness. Captain Morrison states, that he had access in London to Mr. MacPherson's papers, and that he saw many MSS. in the old Gaelic characters containing some of the poems translated, which MSS. they found difficult to read. Lachlin MacVuirich states, that he remembers that his father had a book called the Red Book, which he had from his predecessors, and that Clanronald made his father give up the Red Book to James MacPherson. Professor MacLeod, of Glasgow, assured a friend that he had seen and examined several Gaelic MSS., partly written upon vellum, and apparently of great antiquity, in the possession of Mr. MacPherson, con-

taining portions of poetry mixed with other compositions. MacPherson wrote to a certain clergyman that he had met with a number of old MSS. in his travels, and that he had endeavoured to secure the poetical part of them. He further writes, that he has been lucky enough to lay his hands on a pretty complete poem, and truly epic, concerning Fingal. The testimony of a clergyman who resided in Mull, is to the effect that he was assured by a certain man that the latter in his younger days heard Fingal repeated very frequently in the original, just as Mr. MacPherson has translated it. Is it not apparent now, that, after all, some reliable evidence is available to show, that MacPherson found Gaelic MSS. in the Highlands, and that his modern assailants are by no means justified in dismissing with contemptuous indifference the testimony of reliable men concerning the having in his possession of Gaelic MSS. which he found during his poetical mission through the Highlands? In referring to the intimacy which he had with MacPherson in London, the famous clergyman, Dr. Carlyle, is led to remark, that he was never able to discover in MacPherson's most unguarded moments that he was any other than the collector and translator of the works of Ossian. We have the authority of Dr. Blair for believing, that MacPherson for some months left all the originals of his translations open to inspection and examination in Becket the bookseller's shop, London, and intimated by advertisement in the newspapers that he had done so. Dr. John Smith states, that the Gaelic poems of Ossian lay for a considerable time in the hands of the bookseller for the inspection of all who chose to see them; and, as if this had not been enough, they were offered to the public, had subscribers been found to encourage the undertaking. In his able Essay on the authenticity of the poems of Ossian, Dr. Graham intimates that he saw in the London Magazine for the year 1784 or 1785 an advertisement by Becket, a bookseller in the Strand, certifying that the originals of Ossian had been at his shop for subscription for the space of a whole year, but that the number of subscriptions being inadequate to the expense of publication, the MSS. had been withdrawn. As Blair and Smith and Graham were gentlemen of the highest character, and, therefore, of great veracity, we have every reason to believe that MacPherson placed the Gaelic MS. or MSS. of his Ossian in the shop of the bookseller whose name has been mentioned. If MacPherson forged the poems of Ossian, there is no likelihood whatever, that he would be bold enough to submit his Gaelic MSS. for public inspection. It is somewhat extraordinary, that his modern assailants, who cannot be accused of having an unduly modest opinion of their own acumen, should virtually ignore the fact that MacPherson did submit the Gaelic MSS. of his Ossian to public inspection; and that, consequently, it is *prima facie* absurd to suppose, that he himself

fabricated the poems which he thus exposed to possible if not certain detection, if they were merely his own workmanship.

It is surprising to know, on the authority of Dr. Graham, that corroborative evidence came from an unexpected quarter when the poems of Ossian, in their English attire, began to be extensively read. Captain Parker, who was then residing in Virginia, relates that he was well acquainted with the Rev. Charles Smith, a native of the Island of Mull, who settled near Norfolk in Virginia. A copy of Ossian's poems was sent to Captain Parker, who carried it to Mr. Smith. After a few lines from Temora had been repeated in his hearing, he remarked that he knew that poem, and repeated a great part of it and explained it with an exactness which appeared to Parker to be astonishing and scarcely credible. He acted in a similar manner in connection with several of the other poems. Mr. Smith asserted, that if he had been with Mr. MacPherson, he could have given him some other poems of Ossian well worthy of preservation ; that he remembered them almost from infancy ; that repeating them was the amusement of the children and servants about his father's house, and generally in all the West Highlands, and that still, walking or riding alone, he was wont to repeat them. Mr. Smith died in 1772, and was about 70 years of age at his death. The indirect testimony of Mr. Smith is very valuable, seeing that he lived far away from the scenes of his youth, and that his references to the customs with which he was familiar in his earlier years go far to strengthen the argument that has weighty evidence on its side, in connection with the extensive prevalence and cultivation of Ossianic poetry in the Highlands. Sir John Sinclair, in his very interesting Dissertation on the authenticity of the poems of Ossian, inserts a somewhat extensive correspondence which he carried on with prominent Ecclesiastics of the Church of Rome respecting a Gaelic manuscript of the poems of Ossian that existed at one time at Douay in Flanders. It appears that a Mr. John Farquharson, when missionary in Strathglass, wrote the MS. about 1745 and brought it to Douay with him, where he was for a time Prefect of Studies. A Mr. MacGillivray, who went to Douay College in 1763, affirmed that after the appearance of MacPherson's translation, the complaint among the Gaelic scholars of that College was, that it failed to do justice to the energy and beauty of the original. Mr. MacGillivray was convinced that this MS. contained all the poems that were published by MacPherson ; because Mr. Farquharson remarked frequently in his hearing, after he had read the translation of MacPherson, that he had all these poems in his own collection. The testimony of another Mr. MacGillivray is to the effect, that Mr. Farquharson first saw MacPherson's translation in 1766 or 1767 ; and that after he had read it, he stated that he had all the translated poems in his

possession. "I have seen him an hundred times," Mr. MacGillivray adds, "turning over his folio, when he read the translation, and comparing it with the Erse, and I can positively say that I saw him in this manner go through the whole poems of Fingal and Temora." The important MS., which was at one time at Douay, was unhappily lost or destroyed amid the military disturbances which subsequently swept over that part of the continent of Europe. An accession of strength, of which too much cannot be made, is imparted by the MS. of Douay to the authenticity of the poems of Ossian, and consequently to the veracity and reliability of MacPherson. Even Mr. Campbell, who, unhappily for his lofty reputation for generosity of heart and mind, is most reluctant to award any praise whatever to MacPherson, is compelled, out of regard, doubtless, to the powerful evidence of the MS. of Douay, to admit that, "unless the statement of Mr. MacGillivray is a deliberate falsehood, there is an end of the argument which makes MacPherson the author, though no early copy of the entire poems is known."

Shortly after the publication of Temora, MacPherson accompanied Governor Johnstone to Florida, and, it is supposed, took with him the Gaelic poems of Ossian to that country. From 1773 until his death in February, 1796, MacPherson's time was much occupied in the discharge of the duties which his position as agent of the Nabob of Arcot imposed upon him. He had in contemplation to print the Gaelic poems of Ossian in Greek rather than in Roman characters. A sum amounting to £1,000 Sterling was collected in India among gentlemen who were natives of the Highlands of Scotland, and who were at that time in the East occupying eminent positions in the service of their country. Sir John MacGregor Murray took a prominent part in raising money among his Gaelic countrymen in India for the purpose of publishing the poems of Ossian in the original language. In the circular which he issued, he said, among other things, that his appeal was to "men who have Gaelic blood in their veins and Gaelic sentiments in their hearts—men who know and feel that elegant as Ossian's modern dress is, it is not equal to his native garb, and that Gaelic, barbarous and uncouth as it is represented, has expressions peculiarly nervous and sublime for every noble and exalted idea that can enlarge and elevate the human mind. The object of this address is to verify the prediction of Ossian that Fingal shall be clothed with fame, a train of light to other times." The munificence of the Gaelic gentlemen in India amounted to something like £1,200 Sterling. They exemplified in an excellent manner the truthfulness of the words of Horace:

Coelum non animum mutant qui trans mare currunt.

To a communication which was addressed to him on behalf of the Highland Society of London, for the purpose of ascertaining when he intended to publish the original poems of Ossian, MacPherson sent this reply :

NORFOLK STREET, July 4th, 1784.

MY DEAR SIR,—I received the favour of your letter dated yesterday, and I am sorry the gentlemen should think of giving themselves the trouble of waiting on me, as a ceremony of that kind is altogether superfluous and unnecessary. I shall adhere to the promise I made several years ago to a deputation of the same kind, that is, to employ my first leisure time, and a considerable portion of time it must be to do it accurately, in arranging and printing the originals of the poems of Ossian as they have come to my hands. Funds having been established for the expense, there can be no excuse but want of leisure for not commencing the work in a very few months.

MacPherson died in 1796, without fulfilling his promise, although twelve years had elapsed since the Gaels in India with generous enthusiasm contributed £1,200 Sterling for publishing the original poems of Ossian. Mr. MacKenzie, Secretary of the Highland Society of London, was appointed as one of his executors by MacPherson, and £1,000 Sterling was bequeathed to him for publishing those poems. Mr. MacKenzie died before he was enabled to complete the work which was committed to him, and to which he applied himself with great faithfulness.

Mr. George MacKenzie was the only executor who chose to serve among those whom Mr. John MacKenzie had appointed. As he could not undertake the publication of the Gaelic poems of Ossian, he transferred the MSS. to the Highland Society of London. A Committee was appointed by that society on the 17th of May, 1804, to superintend the publication of the poems in their original language. The Committee examined the MSS. and found that, although some of the smaller poems were wanting, the principal poems were extant. It was resolved to publish the poems that were already available, and to employ every diligence in order to recover such poems as were missing. The proof-sheets were revised by the Rev. Alexander Stewart, who is favourably known as the author of a Gaelic Grammar. In 1807, nearly half a century after the publication by MacPherson of his translation of Ossian, the poems of Ossian in the original Gaelic were published in three volumes, with a literal translation into Latin, as the title-page sets forth, by the late Robert MacFarlan, A.M., together with a Dissertation on the authenticity of the poems by Sir John Sinclair, Bart., and a translation from the Italian of the Abbé Cesarotti's Dissertation on the controversy respecting the authenticity of Ossian, with notes and a supplementary essay by John MacArthur, LL.D. Sir John Sinclair, who was a scholar of great

refinement, and who had an enthusiastic affection for the poetry of the Scottish Gael, terminates his elaborate Dissertation with the statement of two important propositions which he established :

1. "That the poems of Ossian are authentic ancient poetry.

2. "That in a remote period of our history, the mountains of Scotland produced a bard whose works must render his name immortal, and whose genius has not been surpassed by the efforts of any modern or even ancient competitor." There was published in 1817, another edition of the Gaelic text of the poems of Ossian, under the editorship of the eminent Gaelic scholar, Ewen MacLachlan, of Aberdeen. Another edition of the poems of Ossian in the original Gaelic was published by the Rev. Dr. Archibald Clerk in 1870. That edition contains a literal translation by Dr. Clerk of the poems into English. It has likewise a lucid and exhaustive Dissertation on the anthenticity of the poems. The edition is both able and instructive. It is a singular coincidence that the Earl of Bute of that generation aided MacPherson very liberally, bearing as he did a portion of the expense of publishing Fingal and other poems, and the entire expense of publishing Temora and other poems ; while the present Marquis of Bute is entitled to the credit of generously bearing the expense that was incurred by the publication of Dr. Clerk's magnificent edition of the poems of Ossian. There are other important collections of Ossianic poetry. No more honourable name than that of Dr. John Smith is to be found among the Gaelic scholars of his own generation, rich though it was in scholars of learning and critical acumen and patriotic enthusiasm. It was in 1780 that he published his Gaelic Antiquities, a Dissertation on the poems of Ossian and a collection of ancient poetry translated from the Gaelic of Ullin, Ossian, Orran, etc., in other words, an English translation of Gaelic poems which were published by him in 1787, under the designation of Sean Dana. The Sean Dana contain the purest, and in many respects the oldest and best Gaelic in the whole domain of Gaelic literature. Campbell insinuates that the Sean Dana were invented or fabricated by Dr. Smith himself, and that it is vain to look for any traces of them beyond himself. Had Campbell carefully read Dr. Smith's Dissertation, he would have found, that the latter tells in the most ingenuous manner how he was induced to prepare his Sean Dana and from whom he obtained his material. In a foot-note, Dr. Smith gives the names of several persons who aided him by oral recitation, as well as the names of other persons who acted the part of useful and faithful correspondents. "An original collection of the poems of Ossian, Orran, Ullin and other bards who flourished in the same age :" Such is the writing on the title-page of a collection of Ossianic poems, which were collected and edited by

Hugh and John MacCallum, and which were published at Montrose in 1816. A list is appended of the name and residence of the persons from whom the poems that form the collection were received.

In a letter from Ewen MacLachlan, of Aberdeen, which is inserted, these very sensible remarks are made: "If the works of Ossian are a forgery, we have sufficient grounds for believing that the imposition cannot be charged on modern times. Antiquity has ascribed the contents of your work to Ossian, as far as we can rely on the faith of Celtic MSS. and on traditions which we have imbibed with our maternal milk, and whose impressions on our minds will be as permanent as our existence." "The Dean of Lismore's Book, a selection of ancient Gaelic poetry, from a MS. collection made by Sir James MacGregor, Dean of Lismore, in the beginning of the sixteenth century:" Such is the writing on the title-page of a manuscript and a translation of the Dean of Lismore's Book which was published by the Rev. Dr. MacLauchlan, of Edinburgh, in 1862. It contains 2,500 lines of Ossianic poetry, and therefore sets forth a complete refutation of the statement of Johnson who visited the Hebrides in 1773, "that five hundred lines cannot be recovered in the whole Erse language of which there is any evidence that they are a hundred years old." "Leabhar na Feinne: Heroic Gaelic Ballads, collected in Scotland chiefly from 1512 to 1871:" Such is the designation which Mr. J. F. Campbell gave to the collection of Gaelic poetry which he published in 1872. "Reliquiae Celticae:" Such is the name which has been given to Texts, Papers and Studies in Gaelic Literature and Philology by the late Dr. Alexander Cameron. The book in question was published during last year. The editors assert that it may be called a complete corpus of Ossianic poetry. It contains an independent manuscript of the Dean of Lismore's Book. The quantity, therefore, of Ossianic poetry that is still available, is by no means insignificant.

In deference to the many objections which were raised against the genuineness of the poems of Ossian that were given to the world by MacPherson, the Highland Society of Scotland, towards the end of the last century so far as I can ascertain, resolved to submit a series of exhaustive questions to clergymen and others who resided in the Highlands of that country. The object of those questions was to ascertain whether poems similar to those which were collected and published by MacPherson still existed in the Highlands. Minute inquiry was made as to whether the poems published by MacPherson could be identified with poems that were still in circulation. The Report of the Highland Society was published in 1805. Conclusive evidence was adduced to show, that the history of Fingal and his followers, of Ossian and his poems, was commonly known, and that poems

similar to those which were published by MacPherson existed in many parts of the country and could be recited by men who had never heard of MacPherson. The Report terminates with this very decisive language concerning the prevalence of Ossianic poetry. "The Committee can confidently state its opinion, that such poetry did exist; that it was common, general and in great abundance; and that it was of a most impressive and striking sort, in a high degree eloquent, tender and sublime. The Committee is possessed of no documents to show, how much of his collection MacPherson obtained in the form in which he has given it to the world. The poems and fragments of poems which the Committee has been able to procure contain often the substance, and sometimes almost the literal expression—*ipsissima verba*—of passages given by Mr. Macpherson in the poems of which he has published the translations. But the Committee has not been able to obtain any one poem the same in title and tenor with the poems published by him. It is inclined to believe, that he was in use to supply chasms and to give connection by inserting passages which he did not find, and to add what he conceived to be dignity and delicacy to the original composition by striking out passages, by softening incidents, by refining the language—in short, by changing what he considered as too simple or too rude for a modern ear, and elevating what in his opinion was below the standard of good poetry. To what degree, however, he exercised these liberties, it is impossible for the Committee to determine." Nine hundred lines, and when the fragments are included 1,700 lines, of such poetry as that of which MacPherson published a translation, are inserted in the Report that we are now considering, Dr. Clerk is correct in his contention that from the material in their possession, the members of the Committee would be justified in drawing much stronger conclusions than they did in favour of the authenticity of the poems of Ossian. As to the utter lack of ability on the part of MacPherson to invent or forge the poems of Ossian, these citations are sufficient: "Of all the men I ever knew," writes Dr. Blair, "Mr. MacPherson was the most unlikely and unfit to contrive and carry on such an imposture as some people in England ascribed to him. He had none of the versatility, the art and dissimulation which such a character and such an undertaking would have required." Captain Morrison, who was intimately acquainted with MacPherson, writes that so far from composing such poems as were translated, he assisted MacPherson often in understanding some words and suggested some improvements, and that MacPherson could as well compose the prophecies of Isaiah or create the island of Skye as compose a poem like that of Ossian's. The Committee of the Highland Society showed no partiality whatever to MacPherson in the several ingenuous

asseverations which the Report contains regarding the manner that he adopted in all likelihood in arranging his material. It is obvious that, as many versions of the same poem or episode were current, owing to the universal tendency of oral tradition, MacPherson was compelled out of regard to lucidity and continuity of thought and sentiment, to make a judicious rearrangement of the poems or fragments of poems that fell into his hands. Pisistratus, or whoever collected and arranged the poems of Homer, must have followed a similar plan in the arrangement of the Homeric poems that came into his possession. There is, and must be, however, a wide diversity between such an arrangement of poetical matter that was available, and between the excogitation of such poems. Campbell is profuse in his admissions that traditional poems in abundance, written or unwritten and attributed to Ossian, were current in the Highlands and accessible to MacPherson. His grave objection is, that the Gaelic Ossian of 1807 and the Sean Dana of 1787 are almost unknown to the class that recite Gaelic poems which they attribute to Ossian. "The Sean Dana and the Gaelic Ossian are nowhere to be found in any of these collections made from the people." The modern opponents of MacPherson and of the Sean Dana fail, it is very much to be feared, in assigning its due significance to the fact, that almost half a century intervened between the translation of the poems of Ossian by MacPherson and the publication of the Gaelic Ossian—to employ Campbell's own phrase. During so long an interval, much useful poetical material must have been irrecoverably lost.

As a century, with all its changes and transformations in the Highlands of Scotland, intervened between MacPherson's poetical mission through the Highlands and the laudable labour of Campbell in gathering the material of Leabhar na Feinne; no injustice is done to Campbell when it is contended, that he must of necessity have been an imperfect judge of the facilities which MacPherson must have had in preparing the poems of Ossian for publication. And when every deference is made to the frequent allegation of Campbell, that he failed to find Gaelic similar to that of the Gaelic Ossian and the Sean Dana, it surely does not follow that such Gaelic did not exist, unless, indeed, we are to concede that Campbell had accurate knowledge of all the Gaelic that was either spoken or written in Scotland during the long years that passed between 1760 and 1872. It would surely be a violation of all honest criticism to admit, that poems must necessarily have been invented or forged, because, forsooth, an enthusiastic lover of his country's literature did not discover amid all his efforts to disentomb the records of an almost forgotten past, any poetry to correspond exactly in language and sentiment with those poems. Every Gaelic scholar will at once perceive that the Gaelic of

the Sean Dana and of the Gaelic Ossian is far more beautiful and musical than the Gaelic of Leabhar na Feinne ; and that, indeed, the classical Gaelic of Scotland is to be found in those two books or collections. It has to be boldly and confidently maintained, that the modern assailants of MacPherson and Dr. Smith must produce much stronger arguments than the airy sentimentality in which they indulge, before they can convince any honest student of the entire controversy regarding Ossianic poetry, that those two men were forgers or literary impostors and nothing more.

It must be granted, in all candour, that were he so disposed, MacPherson could easily have lessened or avoided altogether the severity of the opposition which he had to encounter in connection with the poems of Ossian. It is evident, that he had a remarkable measure of that lofty independence and pride that lives on through every generation in the hearts and minds of the race to which he belonged. Who could blame him for thus reasoning, when Hume and Johnson were levelling the shafts of ridicule and disparagement against him, that, as he was successful in gaining a reputation in the world of letters, perhaps more enviable and more extensive than their own, he could afford, in obedience to the warmth of his Highland pride, to ignore themselves and their persistent abuse ? It may be fairly held, that much of the Ossianic poetry which he once possessed, was lost during his sojourn in Florida, and while he was engaged in the discharge of important official functions, which must have occupied very much of his time and attention. Nor is it at all unlikely, that Gaelic poems of much value were mislaid and ultimately lost, during the time that passed between his death and the transmission to the Highland Society of London of all the material that remained.

Very forcible is the opinion of the Abbé Cesarotti : " But whatever may be thought on the subject, the works of the Celtic Homer (Ossian) do exist. They are all of the same brilliant and harmonious colouring, and they have a certain author. Let the author have existed in the times of Caracalla or of St. Patrick ; let him be a native of Morven or of Ulster ; let him belong to the family of a petty king or to that of a simple Highlander, it is all the same to those who consider him in the light of a poet. Let such as do not like to name him Ossian call him Orpheus. Doubts may be entertained whether Fingal was his father, but no one will say that he was not the son of Apollo." " I confess," says Dr. Blair, " I cannot avoid considering the discovery of the works of Ossian as an important era in the annals of taste and literature, and the share which I have had in contributing towards it as a part of my life by which I have deserved well of this age and posterity."

NIAGARA LIBRARY, 1800–1820.

BY JANET CARNOCHAN.

(Read 6th January, 1894.)

It says much for the members of any community when we find them providing reading of a high literary order, and especially would this be the case, at the beginning of this century, among a band of refugees just emerged from a great struggle, with the forest around them and everything speaking of a new country and all that is implied in this.

When by the merest chance, some months ago, I laid my hands upon an old, brown, leather-covered Record Book, I had no idea of the rich treat it was to prove. To my astonishment, by dint of much patient study of its thick, yellow pages covered with writing, though large yet very difficult to read, it was shown that in this old town of Niagara in those early days there was a most valuable public library well supported, the accounts showing regular payments and much interest, as evidenced by the money contributed and the regular records. To the boast made by Niagarians that here was held the first parliament for Upper Canada, that here was published the first newspaper, that it contains almost the oldest church records in Ontario, must now be added the honour of having had the first public library, and the first agricultural society. The varied information to be gleaned from this book may be thus classified : 1st, a list of proprietors through the years from 1800 to 1820 ; 2nd, list of their payments and those of non-subscribers ; 3rd, catalogue of library with prices of books ; 4th, money expended ; 5th, rules and regulations ; 6th, account of annual meetings, contingent meetings, etc.; 7th, list of books taken out and date of return ; 8th, alphabetical list of subscribers with separate page for entries for each during these years. When we think of the vicissitudes of the years 1812, 1813, 1814, and of the stirring events which took place here, military occupation by friend and foe, of fire and sword alternately doing their cruel work, we wonder how this library was preserved, for preserved in part at least it was, for the issue of books goes on, a new catalogue with spaces left perhaps for books missing, and in the accounts sums are paid to replace particular books. It is interesting to follow up the period of the war and in all these divisions note the latest entry, and then following an interval of two years without the break of a line even left as space

between such deeds as the glorious death of the Hero of Upper Canada, the rattle of guns and roar of cannons, the flight over frozen plains, watching the smoking ruins of once happy homes, still go on in the same handwriting, the payment of money, the purchase of books, the annual meetings, etc. It may be doubted if in this day of boasted enlightenment we are willing to pay so much for our reading. One thing at least is certain, against the proprietors of this library cannot be made the chargé of light reading now brought so justly against the frequenters of modern libraries. Nothing light or trashy can be found on the list. Theology, history, travel, biography, agriculture, a little poetry, and later, a small amount of fiction. We in these days can almost envy the people of that time for the delight they must have experienced when "Guy Mannering" and "Waverly" appeared, for they knew that the Great Magician of the North was still alive and was sending out regularly those delightful stories, while we can never again hope for such pleasure as the first reading of these books evoked.

In glancing over the list of subscribers we meet with names of many who played no insignificant part—the church, the army, the civil service, the yeomanry, are all represented. We find several names from Fort Niagara, U. S., and also several names of women. Were there nothing in this book but the list of names, this alone would be valuable. It seems strange to think that after all these years we can now take the name of a noted man of those days and follow it up through these pages, tell what style of reading he preferred, when a particular book was taken out, when returned, how he paid his fees, when he attended the meetings of managers, and many other particulars. How little did they think that they were thus providing for us a very interesting page of history now!

The first entry is: "Niagara Library, 8th June, 1800. Sensible how much we are at a loss in this new and remote country for every kind of useful knowledge, and convinced that nothing would be of more use to diffuse knowledge amongst us and our offspring than a library, supported by subscription in this town, we whose names are hereunto subscribed hereby associate ourselves together for that purpose, and promise to pay annually a sum not exceeding four dollars to be laid out on books as agreed upon by a majority of votes at a yearly meeting to be held by us at this town on the 15th August annually, when everything respecting the library will be regulated by the majority of votes.

Andrew Heron.	Wm. Musgrove.	G. Drake.
John Kemp.	Silvester Tiffany.	Wm. Hodgkinson.
John Boyd.	Burgoyne Kemp.	John Jones.
John Young.	John Harrold.	Alex. Stuart.

John McClellan.	John Chisholm.	Peter Ten Brouk.
John Burtch.	John Hardy.	Transferred to J. T. B.
Hugh McLaren.	John Reilley.	J. McFarland.
Wm. Dorman.	Ebenezer Cavers.	John Hill, jr.
Martin McLellan.	Peter Thomson.	Robert Addison.
Thomas Kerr.	John Willson.	Benjamin Pawling.
John Young.	Peter McMicking.	Robert Nelles.
Arch. Thomson.	George Keefer.	Daniel Servos.
Thos. Otway Page.	George Young.	John Decow.
Wm. Drake.	John Smith.	J. Murray.

41 subscribers at 24*s.* each £49 4*s.*, carried to account current page B. 15 August, 1801."

Of the original forty-one the names of only four can now be found in the vicinity, though descendants of several others may be found under other names.

The first on the list, Andrew Heron, was the secretary and treasurer of nearly all the period of twenty years. Robert Addison was the first minister of St. Mark's. Silvester Tiffany was the printer of the "Constellation," which followed the "Upper Canada Gazette." Then follows another list, continued down to 1820, of thirty-four names, making altogether seventy-five, in which we recognize other names.

George Forsyth.	John Powell.	John McNabb.
Robert Kerr.	Robert Weir.	John Robertson.
John Wales.	R. Hamilton.	George Read.
Charles Selick.	Wm. Dickson, A.C.	Robert Mathews.
Colin McNabb.	James Muirhead, A.C.	Dr. West.
Wm. Ward.	Thomas Powis.	J. P. Clement.
T. Butler.	Thomas Butler, A.C.	James Secord.
Wm. McClellan.	Isaac Swayzie.	Wm. Musgrove.
Alex. McKie.	John Symington, A.C.	R. C. Cockrell.
Wm. Mann.	Israel Burtch.	Tubal Parr.
George Havens.	John Ten Brouk.	Ensign Barnard.
John McEwan.	John Silverthorn.	Wm. Claus.

In this list we find the familiar names of Butler, Claus, Dickson, McNabb. That of Swayzie has been made familiar in the name of a delicious russet apple only found in this vicinity and probably first grown on the farm of this patron of our library. Dr. West was from Fort Niagara, and ten names on this list are quite familiar to us yet.

Now follows the account of the first annual meeting held on 15th August, 1800, when it was

"Resolved, that Andrew Heron and Martin McClellan be made commissioners to arrange the business of the society till the annual meeting

to collect the subscriptions and lay it out in books to the best advantage, and that they act by the following rules :

RULE I.

To receive from every subscriber three dollars and no more..

RULE II.

As soon as thirty dollars is collected to lay it out on books, none of which shall be irreligious or immoral.

RULE III.

Every subscriber may, if he chooses, when he pays his subscription, make the choice of a book not exceeding his subscription, which shall be procured for him with all convenient speed, provided nothing irreligious or immoral is contained in the same.

RULE IV.

As soon as a number of books can be procured, not less than fifty volumes, every subscriber shall be entitled to receive any book that remains in the library that he chooses, which he shall return in one month in good order.

RULE V.

No book shall be allowed to any of the subscribers unless they have first paid their subscription."

Here follows a catalogue of books received into the library 2nd March, 1801, No. 1 to 80.

It is remarkable that the first thirty volumes are all of a religious nature, volumes 1, 2 and 3 being Blair's Sermons, and 4 and 5 Walker's Sermons, 9 and 10 Fordyce's Sermons to Young Women ; the names of Watts, Bunyan, Boston, Newton, Doddridge, Wilberforce, Watson, Owen and Willison are seen. An attempt is even made to give proper guidance to young people in an important crisis of life—as No. 28 on the list is Religious Courtship. It is not till we reach No. 34 that we see any history, travel or poetry. This first purchase of eighty volumes, costing £31 17*s.*, furnished the young people in these forty homes in poetry only Ossian, Cowper's Task, Campbell's Pleasures of Hope, but they might revel in the Citizen of the World and the Rambler, Bruce's Travels, or Robertson's History of Charles V., and if Religious Courtship pleased them not as No. 28, No. 70 is simply Letters on Courtship. The only work of a less specific gravity is No. 73, The Story Teller, which no doubt was popular with the children of those households. The catalogue goes on during the years, up to 937, and contains many expensive works ; then follows a list of payments for books, and money received for dues, and several pages are then occupied with the account of the annual, always spelled Annuall, meetings. These always took place on the 15th August, and the record goes on without any break, except the year 1813, when the town was in the hands of the Americans,

and 1814, when heaps of ruins replaced happy homes; also 1819 no meeting was held. The question as to how many of the books were preserved and how they were saved is yet to me an unsolved problem. Of course a large number were in circulation in the houses of the town and township; while some would be burnt, others would be saved; but it is certain that a great many of the books in the library were not burnt, as afterwards from the issue of books, from the numbers given as taken out and returned day after day, it may be seen what books were not destroyed. That many were destroyed or lost is certain, as in the accounts for next year the names of many books are given as to replace those lost. There is a new catalogue with spaces left.

To resume the account of meetings.

"Niagara Library Annuall Meeting, No. 2, held this 15th day of August, 1801. Resolved, that in addition to the two trustees who have acted last year two others shall be chosen, to act jointly with them for the year ensuing, and in the next annuall meeting two others shall be chosen to act with these four, and afterwards yearly two fresh ones shall be chosen, and the two oldest shall go out in such a manner as to have always six acting trustees, and at all meetings for transacting business the trustee present who shall be oldest on the list shall take the chair."

Rev. R. Addison and Mr. John Young were the additional trustees this year. "Old members to pay $2, and new members $4." Members who lived out of town were allowed to take two books at once, the time of returning to be extended to six weeks to those in the township, and to those out of the township two months. "Members neglecting to return a book at the proper time to pay a fine of sixpence currency for every week of detention, also if any book be lost, the member to whom it was given shall pay for it at the original cost, if it belongs to a set the whole set to be paid for by the member who lost it, he being entitled to the remaining volumes.

"Resolved, that all members who shall not pay the two dollars above mentioned within six months from this day shall be suspended. Resolved, that every member who shall withdraw from the Society shall have a power of giving his right to any other person approved of by the trustees. Resolved, that the trustees shall meet quarterly, viz., on the second day of every Quarter Sessions of the Peace, and contingent meetings shall be called by the chairman at the request of any two of the trustees."

"Quarterly meeting held at Niagara, 14th October, 1801. Present, Martin McLellan, Rev. R. Addison, Jno. Young. Adjourned till the

next quarterly meeting held at Niagara, 13th January, 1802. Present, Andrew Heron, Martin McLellan, Rev. R. Addison, Jno. Young. Books in catalogue from 118 to 150 received at prices annexed, and that George Young shall make a case for the books, for which he shall be paid a reasonable price." This we find in the accounts to be £5 2*s.*

At the quarterly meeting, April 14th, 1802, "Ordered, that Mr. Tiffany print the laws of the Society, and be allowed three dollars for the same, and deliver not less than seventy copies to the trustees, one to be given to each subscriber, and that Mr. Murray be allowed one dollar more for Robertson's History of Charles V."

At the annual meeting, August 14th, 1802, No. 3, "Robt. Kerr, Esq., and Mr. Jno. Hill, trustees added." A stringent law is passed that "that part of the fifth resolution of the second meeting of the Society which directs that every member who shall neglect to return the books shall pay into the hands of some one of the trustees sixpence currency for every week he continues to hold the same after the time limited is expired, be enforced by the librarian, he not being at liberty to let him have another book until that sum is paid, and that that be extended to every person, whether member or not."

New members were this year to pay $5, and next year this was raised to $6. In 1804 comes the first payment to the librarian, and this is certainly a modest allowance. This library seems to have solved the difficulty of keeping down the expenses, as through all these years there is no outlay for firewood, for rent, for light—the allowance to the librarian being a percentage on money paid by what are called non-subscribers. The original members are called sometimes proprietors and sometimes subscribers.

"Resolved, that Andrew Heron be librarian for the ensuing year, and be allowed 12½ per cent. of all the moneys collected for the last twelve months from non-subscribers, and the same for the year to come, and shall be obliged to make good all the books that may be lost by non-subscribers."

This seems very hard on the librarian, but he must have been a book-lover, for through all these years he remained faithful to his trust—the emolument sometimes being £1 7*s.* 6*d.*, sometimes £2 12*s.* 6*d.* For the year 1817 it was only 5*s.* 7*d.*, and the largest amount was £6, which for those days must have been munificent. In 1804, books admitted from 316 to 344, and in January, 1805, quite an addition was made to the library as well as to the members of the society, which item tells us what

we had seen mentioned elsewhere of the existence of an Agricultural Society with a number of valuable books.

"Resolved, that the books mentioned in the catalogue from 348 to 397 be received from the Agricultural Society at the annexed prices, and that in lieu of them the arrears of Robert Kerr, Robert Addison, George Forsyth, Colin McNabb and Robert Hamilton be remitted to them, and that a share in the library be given to Wm. Dickson, James Muirhead, Thomas Butler, John Symington and Joseph Edwards at £2 8*s.* each, all these sums amounting to £16 8*s.*"

In 1805, the trustees are John Kemp, Martin McLellan, John Young, John Waterhouse, Alex. McKie, Wm. Mann, and evidently it is found difficult to enforce the rules, for it is "Resolved, that each and every of the laws and regulations made at the last annual meeting shall continue for the year ensuing the same as they were made." At a contingent meeting, 12th November, 1805, "John McNabb be admitted as member as one of the Agricultural Gentlemen, and Ralph Clench."

At annual meeting, No. 7, August 15th, 1806, Geo. Reid and John Grier, the two new trustees; each proprietor to pay $1 a year; a share, always spelled shear, to be sold at $6.50. "Resolved, that Jacob A. Ball and Lewis Clement be admitted to a share in right of their fathers as members of the Agricultural Society, those gentlemen already having purchased shares, and that Jane Crooks, eldest daughter of the late Francis Crooks, be admitted to a share in right of her father as a member of the Agricultural Society."

Thus history repeats itself. As the daughters of Zelophehad demanded that the inheritance of their father should pass to them, Miss Crooks, over three thousand years afterwards, makes the same claim, and is as successful in obtaining her share of current literature as they in obtaining their share of land. This is not the only woman's name on the list, as we find in 1815 list the name of Miss Hill in place of her father. Also in list of payments the names of Mrs. Sluny, Fort Niagara, N.Y., 6*s.*, Mrs. Stuart, one year, 15*s.*

Members in town were now allowed to take out two books at once, 500 tickets were to be procured with all convenient speed to continue the number to be pasted on each book as entered.

"At annual meeting, No. 8, 1807, shares to be sold at $7.00 each. Resolved, that one hundred copies of the catalogue be printed, and one copy to be given to each proprietor, and also one hundred copies of an abridgment of the laws, if it can be got done on reasonable terms."

"A contingent meeting, 24th Oct., 1807. Present, Alex. McKie, Wm. Mann, Robert Kerr, Jas. Muirhead, Geo. Reid, John Grier. Ralfe

Clench, Esq., offers to take charge of the library on being allowed his proportion of the annual payment. Resolved, that his proposal be accepted if he keep the library open from 10 to 12 o'clock every day, Sundays excepted. Ordered, that Mr. Jas. Turlin's proposal to make a book case, the same as we have, for $12 be accepted." The first book case was £5 2*s*., so that prices must have decreased.

"A contingent meeting, August 1st, 1808. Andrew Heron having prepared a room for the library and offers to perform the duties of librarian, and be answerable for the books that may be missing as usual, Ordered, that his offer be cheerfully accepted. N.B.—Mr. Clench refusing to give up a *kay* to the library, A. Heron will not become responsible for the books that may be missing."

From October, 1807, the entries of books are in an entirely different hand, but Mr. Heron still visited the loved books, for the name frequently occurs, and the next year the entries go on in the same large hand. The little difficulty of the key must have been settled. In the catalogue, books 568 to 611 are entered in a different hand, which is the period of Mr. Clench being in office.

Annual meeting, No. 9, August 15th, 1808. The new trustees are Hon. Robt. Hamilton and Mr. Jno. Symington. Members out of town to be entitled to three books at a time. "Resolved, that Andrew Heron be librarian and treasurer."

Annual meeting, No. 10, August 15th, 1809. Rev. Jno. Burns, minister of St. Andrew's, and John Powell to be the two new trustees, and in place of Hon. R. Hamilton, deceased, John Wagstaff. Shares to be sold at eight dollars. Whether from the liberality of Mr. Heron in providing a room, or from his length of service, or some other reason not known, at this meeting it was "Resolved, that the librarian be entitled to receive 25% of all the money collected from non-subscribers and fines"; the additional title of clerk is now also given, thus, "A. Heron to be librarian, treasurer and clerk."

Annual meeting, No. 11, August 15th, 1810. "Resolved, that attendance on the library be required only one hour, from eleven to twelve on Tuesdays, Thursdays and Saturdays in every week."

Annual meeting, 15th August, 1811. The trustees this year are James Crooks, George Reid, Rev. John Burns, John Powell, James Muirhead and Martin McLellan. Shares are sold at $9—$1 to be paid by each proprietor and $3 by others, or $1 a quarter.

Annual meeting, No. 13, August 15th, 1812. Proprietors to pay $2 each. Books admitted at a contingent meeting 15th November, 1812, shortly after burial of Brock; books admitted, 781 to 827.

The next entry is 15th August, 1815. What a different state of affairs from that of 1812, when war had been declared and Brock was marching to Detroit; or from 1813, when an enemy held the town; or 1814, when the rubbish of bricks was being taken to build Fort Mississagua! But with intrepid courage our trustees meet and make arrangements for the work of the library going on as usual. The trustees were John Symington, George Young, James Crooks, John Burns, George Reid, Andrew Heron. Notwithstanding all the losses incurred by the townspeople, the charges are made somewhat higher, each proprietor to pay $2.50. Shares to be sold at $9, and non-proprietors $4 a year, or $1.50 a quarter, or $1 a month. At a meeting, 22nd January, 1816, books admitted, 882 to 90

Annual meeting, No. 15, August 15th, 1816. "Resolved that John Wray be librarian and clerk."

Quarterly meeting, 9th October, 1816. Books admitted, 901 to 909.

Annual meeting, No. 16, August 15th, 1817. "Resolved, that the meeting being thin that no new trustees shall be chosen, and shall remain to act as last year. Shares to be sold at $10." There seems to have been some difficulty about books circulating too much, as witness the next: "Resolved, that any proprietor or other person who receives books out of the library and allows any person to take them out of his house shall for every offence pay to the librarian £1 currency."

Annual meeting, No. 17, August 15, 1818. "Resolved, that the meeting being thinly attended no new trustees shall be chosen. All regulations remain as last year."

At a meeting of the trustees, held on 1st March, 1820, present John Burns, George Young, James Crooks and And. Heron, "Resolved, that whereas Andrew Heron offered to take charge of the books belonging to the library, that the books shall be transmitted to his house with all convenient speed, and shall there be inspected by Andrew Heron and James Crooks as soon as can be conveniently done."

Here is the record of the last meeting of the trustees of this library. "Whereas the Niagara library has been greatly wasted, first by being plundered by the army of the United States, and has since been greatly neglected, very few of the proprietors having paid their quota to support the same, we, whose names are hereunto subscribed, hereby relinquish our claims on the same to Andrew Heron (who has now opened a library of his own for the use of the public) in consideration of his allowing us the use of his library for three years; this he engages to do to all those who have paid up their yearly contributions to the year 1817 inclusive; to those who have not paid to that period he will allow according to

their deficiency in those payments. We consider those propositions as quite fair, and do thereto assent."

JAS. CROOKS,	JNO. MCEWAN,
J. MUIRHEAD,	J. BUTLER,
JNO. SYMINGTON,	GEO. YOUNG,
JNO. WAGSTAFF,	JNO. GRIER,

JOHN POWELL.

In turning now to the account of money expended and received, it tells something of the love of books in those days that, from the year 1801 to 1818, there was expended on books for this library about £500, the first outlay being £46 17*s.* on August 15th, 1800. The record book itself cost £1, and Mr. Tiffany received for printing £1 4*s.* In reading the rather monotonous account of money paid yearly, monthly, or quarterly, we sometimes meet with a pleasing variety, as books sold by vendue, spelled vandue, fine for detain of books, money to replace a book lost, books and tracts presented, a book of sermons sold to some sermon reader. The list, scattered over many pages, of money expended for books is interesting.

	£	s.	d.
1801	46	17	0
1802	27	4	6
1803-4	92	10	6
1805	34	8	1
1806	36	8	0
1807	20	19	3
1808-9	20	13	3
1810	31	12	6
1811	43	4	3
1812	21	16	6
1815	24	4	6
1816	15	5	6
1817	43	6	7
1818	17	2	6

SUBSCRIPTIONS PAID.	£	s.	d.
1801—41 subscribers	49	4	0
1806— 5*s.* from 35 subscribers	8	15	0
1807— 5*s.* " 41 proprietors	10	5	0
1808—10*s.* " 44 "	22	0	0
1809—10*s.* " 42 "	21	0	0
1810—10*s.* " 44 "	22	0	0
1811—10*s.* " 45	21	5	0
1812— 5*s.* " 42	10	10	0
1815—$2 " 25	12	10	0
1816—12*s.* 6*d.* " 13	8	2	6
1817—12*s.* 6*d.* " 15	9	7	6
1818—12*s.* 6*d.* " 8	5	0	0

This sum of £500 does not give all the outlay for books, as many single books are entered alone and not in this way. The modest emolument of the librarian may be seen in the following list, culled from many pages, he receiving a per centage on all sums paid by non-subscribers and fines, the sum varying from 5*s.* 7*d.* one year to £6, but generally less than £2, the whole payment to librarian during these twenty years being £24, so that his must indeed have been a labour of love.

	£	s.	£	s.	d.
In 1804—12½ per cent. on	11		=1	7	6
1805— " " "	11		=1	7	6
1806— " " "	9		=1	2	6

	£	s.	£	s.	d.
In 1807—12½ per cent. on	9		=1	2	6
1808— " " "	6	5=		13	6
1809— " " "	10		=1	5	0
1810—25 " "	9		=2	5	0
1811— " " "	10	10=	2	12	6
1812— " " "	10	10=	2	12	6
1815— " " "	24	0=	6	0	0
1817—12½ " "	2	5=		5	7
1818—25 " "	13	15=	3	8	9

It would be interesting to us to know how so many books were saved. It is known where Mr. Heron lived in the time of the war. The story is told that his wife, with infant, was carried out on the street from a house in the centre of the town. It is likely, as there were forty subscribers and perhaps as many more non-subscribers, and each person might have out three books, there might be two hundred books in circulation, many of which might come back. Then as many articles of furniture were saved, being carried out to the street, many of the books might be saved from the library. The new catalogue gives a list of two hundred with spaces left between. The spaces I at first thought represented books missing, but I have now concluded that the numbers given represent books bought to replace the old ones burnt or lost, as very often the prices are different from the first catalogue, and that the spaces represent books either in the library or if lost not replaced, as in the list of issues of books after the war many numbers occur representing books in these spaces.

It may be worth recording, as forming another link in the history of our library, a strange coincidence which occurred while writing this paper, by which one of the books was heard from. So far I had not met a single person who had even heard of the existence of the library, but calling on an old lady a resident of the town, to inquire about it, a postal card was produced received that day from Ancaster, with this question, "Can you tell me anything of a public library in Niagara when the town was burnt, as I have a book which was the only one saved from the fire." I have since then seen the book. It is number 51 in the catalogue, Blossoms of Morality, or Blossom on Morality, and is remembered by the owner as charred with fire; but these burnt leaves are now torn away, and on an inner page is written, "This book was saved by my father, who was an officer in the British army when the town was burnt, December, 1813. The only book saved from the library. Thomas Taylor." As a matter of fact it is the only book in existence of which we know anything, but it might be worth inquiry if other books can be found belonging to the library, or what became of the library

after it came into the hands of Mr. Heron. We know that he kept a bookstore and published the Gleaner newspaper, bound copies of which for the year 1818 are in homes in the town. Also a copy of Mavor's spelling-book printed by him, with catechism of Church of England at the end, second edition date not plain, but some time after 1800. On another sheet of the record book, headed subscription paper number two, the exact words of the first page of book are copied and the names John Wagstaff, Richard Cockrell, James Hyslop, William Musgrove, Lewis Clement, Wm. Ball, Wm. Forsyth, Wm. Robertson, Alex. Rogers, Andrew Brady, Jas. Patterson, 16th August, 1815 : to these are added afterwards A. Heron, T. Symington, P. Ball, W. Hodgkins, T. Jones, J. Muirhead, George Young, W. Burtch, John Robinson, George Reid, Geo. Havens, J. McEwan, Miss Hill. In 1816, names added are, Thos. Butler, Jas. Heron—a sadly diminished list of twenty-seven.

It is intensely interesting to follow all the different divisions of contents through so many years. There was no meeting in 1813, 1814, 1819. Books were taken out up to May 24th, three days before the town was taken. John Dodd paid 5*s*. and Capt. Roxborough 5*s*. There are few records while in possession of U. S. troops, but some money was paid and a few books taken out. "June 18th, 1813, Capt. Dorman, U. S., made a payment, three months, 5*s*." (there is a Wm. Dorman in first list of proprietors). In 1814, March, J. Rea, Ensign, 100th Regt., 10*s*., and the names of John Valentine, 100th Regt., and Jno. Gibson, Field Train Department. Then in 1815, different payments from officers, as Col. Preddy, Col. Harvey, W. E. Athinleck, Hospital Asst. Then Dep. Asst. Com. Gen. Lane, Capt. McQueen, Maj. Montgomery, Major Campbell, Lieut. Vigoreux, Col. St. George, Thos. Cummins, Sergt. 41st Regt., Capt. Claus, Capt. Lyons, Lieut. Vanderventer, Ensign Winder, Capt. Saunders, Capt. Reid, of Fort Niagara, Sergt. Jenkins, Fort Niagara, Dr. West, Fort Niagara, had a share in 1806. Many strange names occur. In the course of my reading the other day occurred the name of Jedediah Prendergast, and singularly enough from the thick, yellow pages of this record stands out conspicuously this identical name, Jedediah Prendergast. But in list of money paid we find Dr. Prendergast, also the names of John Easterbrook, Benj. Wintermute, Louis Dufresne. It is singular that the accounts are kept partly in Halifax currency, partly in York currency, and partly in dollars and cents. In the pages carefully ruled for proprietors, different years, the yearly payment is given as 10*s*. or 5*s*., as the case may be, while in the other list these are entered 16*s*. and 8*s*. In many cases the right of proprietorship is transferred to another. In 1815, several books are bought to replace those missing, such as Spectator, Burns' works, Don Quixote, and in 1816,

Joseph Andrews, Robertson's America, Watt's Improvement, Humphrey Clinker, Children of the Abbey, Josephus, Walker's Sermons, but Porteous' Sermons sold for 10*s.* In 1816, "by amount of books sold at vandue, £27 12*s.* 2*d.*, N.Y. cy., £17 5*s.* 1*d.*" In 1817, "received for damage done to Life of Wellington, 17*s* 6*d.*, Blackstone's commentaries, old copy, paid for being lost, £1 19*s.*" These seem high prices for injury to books. "December 17th, 1804, received from Pte. Nicklon a fine for keeping a book eighteen weeks at 6*d.* sterling, 14*s.* 4*d.*" Poor private, the law said 6*d.* currency, but from his scanty pay he is compelled to disburse this heavy tax.

One entry defeated every effort to decipher it till a happy guess makes it read, "November 12th, 1815. To a Gownd to Mrs. Nulin for taking care of books 15*s.* 6*d.*" Happy Mrs. Nulin, were she fond of reading, for not only might she gratify her inclination, but she also receives a *Gownd* as a reward. There seems in the last years to be a deficit, expressed as balance due A. Heron £11 9*s.* 9*d.* in 1818, showing our treasurer to have been a man of means, as shown also in the record book of St. Andrew's church, of which he was treasurer, when there was a balance due of £176. The last entries are, "By cash received from Mr. Smith for detain of books over the limited time, April 19th, 1819, 7*s.* 6*d.* Aug. 18th, By cash, Mr. Crysler, for detain of books over the limited time, 5*s.*" There are frequent entries of books presented, also tracts. In the catalogue, No. 444 is Abelard and Heloise, presented by Mr. Alexander Cameron, student-at-law. There are altogether 102 names of proprietors, the largest at any time being 45, in 1811, and the smallest eight, in 1818. Among the books in the catalogue are, in poetry, Pope's works, 10 volumes, £2 10*s.*; Shakespeare's, eight volumes, £2 12*s.*; Milton, Johnson, Dryden, Virgil, Thomson, Spenser, Ramsey, Burns, Scott. Fifty volumes on Agriculture, many of them very expensive works, came in 348–398 from Agricultural Society, although in report for 1892 Hon. John Dryden said the first Agricultural Society was formed in 1825.

Hume's History of England, continued by Smollett, 21 volumes, £7 4*s.*; Bruce's Travels, eight volumes, £7 4*s.*, also Cook's and Ansons' Voyages. The library was especially rich in works of travel and in magazines; regularly every year are catalogued, European Magazine, Edinburgh Magazine, Edinburgh Review, Scot's Magazine, Lady's Magazine, British Critic, Annual Register. The British Theatre, 25 volumes, £11, might cause some of our book committees to hesitate in these days, though it staggered not our brave proprietors of those early times. Altogether we think we have much reason to congratulate these pioneers of civilization in this peninsula that such a taste was shown for reading

of such a high order, and express the hope that the libraries of the future may be as well selected, that the public may make as great sacrifices and support as liberally these aids to culture, and that many such secretaries and treasurers may be found willing to give time and faithful service to secure good literature, not only for the present, but to hand down to those to come.

A few words may be pardoned in relation to other libraries in the town. A most interesting and valuable collection of books is to be found in the rectory of St. Mark's church, consisting of about a thousand volumes, with many folio editions quite rare. These were formerly the property of Rev. Robert Addison, sent out by S. P. G. Days—nay, months—might be pleasantly spent in loving examination of these rare editions from Leyden, Oxford, Geneva. Well was it that they were not in any house in town in December, 1813, but being at Lake Lodge (about three miles out in a log house, part of which may yet be seen) they were saved. They were lately in possession of Dr. Stevenson, but by the zeal of the Venerable Archdeacon McMurray they were procured and placed in the rectory. Every book has placed in it this inscription: "Presented to St. Mark's church by the heirs of the Rev. Robert Addison, to be the property of that church in perpetuity." There are altogether fifty-three folio volumes, many of them being specially interesting. One of these, the complete works of George Buchanan, 1715, poems, Latin works, History of Scotland, a Satyr on Laird of Lydington, printed 1570, all in one volume. Hooker's Ecclesiastical Polity, 1598. One folio has been well or rather much used; it is Historical, Geographical and Poetical Dictionary, 1694. No doubt many came, allowed by the kind old man, to consult its pages. On the first leaf, these words show that there were in those days restrictions on the publication of books (these were not removed till the time of William III.): "Whitehall, 28th January, 1691/2. I do allow this work to be printed. Sydney." Jeremy Taylor, Polemical and Moral Discourses, 1657; Burneton, 39 articles, 1700; Machiavelli's Works, 1680; Spottiswood's History of Scotland, 1666; Fuller's Holy State, 1642; Montague's Essays, 1632; Fiddes' Life of Cardinal Wolsey, 1724, with copper plates, one being View of Kitchen of Cardinal's Cottage, Christ Church. Another volume is Historical Collection, Rushworth, 1659, with strange picture of James I., and the awe-inspiring legend "Touch not mine anointed" bringing up thoughts of the length to which this doctrine was carried by that unhappy race. A prayer book, Breeches Bible, 1599, in black letter, and Psalms, version of Sternhold and John Hopkins, all bound together. In the prayer book is the prayer offered "That it may please thee to bless and preserve our Most Gracious

Sovereign Queen Mary, Prince Charles, and the rest of the *Royal Progenie.*" This book has been rebound in vellum.

Other works are Xenophon's Cyrus, 1713; Virgil, 1576; Quintillion, Oxford, 1692; Tillotson, 1675; Poli. Synopsis London (Poole's), 1669; five volumes, folio, Matthew's Commentaries, Plutarch's Morals, 1603; Xenophon's Cyrus, Cicero's works in Latin. A few others at random—Shakespeare, 1771; Spectator, 1726; Jonathan Edwards, 1699; Cicero's Orations, 1590; Lord Clarendon's, 1676; Latin Funeral Orations, 1611; Greek Grammar, 1683; Pope's Iliad, 1721; Erasmus, Rotterdam, 1526; New Testament (French), Geneva, 1577; Pliny's Epistles, 1640; Stillingfleet, 1681; Jeremy Taylor, 1676; Virgil, 1613; Plutarch's Morals, 1603; St. Augustus' City of God, 1610.

Another library, that of St. Andrew's church, singularly enough also numbering about 1,000 volumes as the two already referred to, came into existence Aug. 26th, 1833, and here we see the name of Andrew Heron in the issue of books. There is an index with reference to pages, 214 names, from 1833 to 1869, up to folio 274. Up to 1836 there are 120 names, showing that a large number of families attended St. Andrew's church. There was a catalogue costing *7½d.* in 1835, and memorandum of copies sold up to 1843. The catalogue numbers 919 books. The only names on the list now attending the church are McFarland, Elliot, Davidson, Blake, Wynn, Carnochan. The first name is, as in Niagara Public Library, Andrew Heron. In 1836 occurs the name of one who afterwards became one of the Fathers of Confederation, Archibald McKellar. He attended the Niagara District Grammar School, was married by Rev. Dr. McGill: there are only two books marked against his name.

Many memories of the past are brought up by the names Barr, Lockhart, Crooks, Stocking, Whitelaw, Eagleson, Wagstaff, Miller, Malcolmson, McMicking. Many books were presented by friends in Scotland, but there are only a few old or rare books. The Harper's Library Series seem to have been well read. It may be recorded as worthy of notice that in the old record book of St. Andrew's church, dating from 1794, many of the names of the supporters are also found in the list of proprietors of the Niagara Library, 1800, showing the love of reading always remarked of the nationality most found in the Presbyterian church.

The successor to these libraries is the Niagara Mechanics' Institute, having been in existence since October 24th, 1848, as a copy of the constitution and by-laws, printed by F. M. Whitelaw, with names of members, one hundred and one, shows; Pres., W. H. Dickson M.P.P.; Vice-President, E. C. Campbell; Secretary, Dr. Melville; Treasurer and Libra-

rian, W. F. G. Downs. Among the committee are Thos. Eedson, John Simpson, Jas. Boulton, J. D. Latouche, B.A , Sam. Risley, Jno. Whitelaw. There is also a catalogue printed by Wm. Kerby in 1861, then numbering about 1,000 volumes. The library has gone through many vicissitudes; being closed for some time, it was greatly revived through the exertions of Dr. Withrow while a resident of Niagara, and has always owed much to the great interest shown in it by Wm. Kirby, F.R.C.S. It now numbers 4,000 volumes and has received much praise for its judicious selection of books.

When we think of the influence in any community of a good library, of the pleasure and profit derived, we think of the words of Ruskin. "We may have in our bookcases the company of the good, the noble, the wise. Here is an *entrée* to the best society. Do you ask to be the companions of nobles, make yourself noble; you must rise to the level of their thoughts, to enter this court with its society, wide as the world, multitudinous as its days; the chosen and the mighty of every place and time, here you may always enter. Into this select company no wealth will bribe, no name overawe; you must fit yourself by labour and merit to understand the thoughts of these great minds. You must love them and become like them." Judge, then, how much the people of this vicinity owe to the proprietors of the Niagara Public Library, furnishing to the young people of so many households reading of so high an order, fitting them to fight manfully the great battle of life.

CATALOGUE OF BOOKS.

Received into Library 2nd March, 1801—1 to 80.

1, 2, 3—Blair's Sermons.
4, 5—Walker's Sermons.
6, 7, 8—Divine Œconomy.
9, 10—Fordyce's Sermons.
11—Newton's Prophecy.
12—Smith's Prophecy.
13—Watt on Son of God.
14— " Improvement of Mind.
15— " Memoirs.
16— " Holy War.
17—Dyer's ———.
18—Willison on the Sabbath.
19—Boston's Character.
20— " Regeneration.
21—Anderson on Psalmody.
22—Cloud of Witnesses.
23—Scott's Essays.
24—Wilberforce's View.
25—Rise and Progress of Religion in the Soul.
26—Watson's Apology for Bible.
27— " " Christianity.
28—Religious Courtship.
29—Owen on Trinity.
30—Brown's Christian Journal.
31—Burton's Feeling.
32—Muirhead's Differentiation.
33—Brown's Oracles.
34—Robertson's History of South America, £1 12*s*.
35, 36—Robertson's History of South America.
37—Stanton's Embassy to China.
38, 39—Residence in France.

40, 41—Morse's Geography.
42—Bruce's Travels.
43, 44—Citizen of the World.
45, 46—Ossian's Poems.
47—Campbell's Narration.
48, 49—Croker on ———.
50—Caroline Lichfield. (Replaced in 3 vols.)
51—Blossoms of Morality.
52—Pleasures of Hope.
53, 54—Mirror.
55—Mental Improvement.
56—Lady's Library.
57—Cowper's Task.
58–60—Marvellous Magazine.
61—Bennet's Lectures.
62–65—History of Jacobinism, £2.
66, 67—Repository.
68, 69—The Rambler, £1 4*s*.
70—Letters on Courtship.
71—
73—Story Teller.
74–77—Emperor Charles V.
78—Burk's Revolution.
79—McIntosh's Revolution.
80—A letter to Burk.
81—Communicant's Companion.
82–89—Pope's Works, £2 10*s*.
90—Milton's Works.
91—Brydon's Tour.
92—Indian Concert.
93, 94—Burnet's Theory of Earth, £2.
95—Robertson's Proofs.
96—Young's Essays.
97–99—Robertson's History of Scotland.
100—History of War in Asia.
101–2—Burk's European Settlement in America.
103—Daniel and Revelation.
104—Gospel Its Own Witness.
105—Duty of Female Sex.
106–17—Rollins' History, £2, 8*s*.
118–19–20—Edinburgh Magazine, £3 18*s*.
39—Omitted in its place and carried to page 13, act. current, Boston's Memoirs.
121—Snodgrass' Revelation.
122–24—Gillies' Greece, £2 12*s*.
125–26—Moore's Letters.
127–28— " Journal.
129–30—Fuller.
131—Ray's Discourses.
132—Taplin's Farriery.
133—Female Complaints.
134–37—Wells' Geography.
138–39–40–41—History of British Admirals, £2.
142–43—Knox on Education.
144—Paradise Regained.
145—World Depths.
146–47—Boderick's Travels.
148—Constitution U. S.
149—Tracts presented by Andrew Heron.
150—History of Barbary.
To—more allowed for History of Charles.
151–52—Beattie's Essays.
153–54—Leland's Life of Philip.
155–56—Bloody Tribunal.
157—Bishop Burnet's History of His Own Times.
158–59—Quintius Curtius' History of Alexander.
160—Mendrill's Journey from Aleppo to Jerusalem.
161—Judah Restored.
162–63—Hervey's Meditation.
164—Goldsmith's Rome.
165—Adam's Views.
166—New Pilgrim.
167—Moral Repository.
168—Colet's Discourses.
169—Theological Magazine.
170–71—N. Y. Missionary.
172—Female Education.
173—Seneca's Morals.
174—Murray's Sequel.
175—English Reader.
176—Zimmerman on Solitude.
177—Fuller's Gospel of the Bible.
178—
179—Mackenzie's Voyage.
180–81—Morse's Gazetteer, £2.
182—Key to the Prophecies.
183—History of Iceland (presented by J. Young.)
184–85—Forbes' Works.

186-206—Hume's History of England, continued by Smollet (21 vols.) £7 4*s*.
207-212—Heine's History of Scotland, £3 17*s*.
213-17—Ferguson's History of Rome, £4 7*s*.
218—Kinneard's Edinburgh.
219—Heates' Pelew Islands.
220—Robertson's India.
221-22—Prideaux Connection.
223-28—Josephus' Works, £2 2*s*.
229-33—Edinburgh Magazine, £5 12*s*.
234-36—Edinburgh Review.
237-40—Johnson's Lives.
241-48—Shakespeare's Works, £2 12*s*.
249-52—Dryden's Virgil.
253-54—Silver Devil.
255-57—Gonsalvo of Cordova.
258—Joseph Andrews.
259-60—Humphrey Clinker.
261-62—Roderick Random.
263—John Bull.
264—Park's Travels.
265-70—British Tourists, £2 17*s*.
271-72—Heron's Journey.
273-76—Hawkesworth's Voyages.
277-80—Cook's Voyages.
281—Anson's Voyages.
282-83—Leland's Views.
284-86—Blair's Lectures.
287—Erskin's Discourses.
288—Campbell on Miracles.
289—Wall's World to Come.
290-91—Beattie's Evidences.
292—New York Magazine.
293—Fuller.
294—Thompson's Seasons.
294—Spenser's Shepherd.
296—Sherlock on Providence.
297—History of George III.
298-99—Knox's Essays.
300—Commerce of Ancients.
301—Thoughts on State of Religion.
302—Theological Magazine.
303—Memoir's of Gen.—
304—Fletcher's Appeal.
305—M. Magazine.
306—Forsyth on Trees.
307—N. Y. Missionary.
308—Saint's Everlasting Rest.
309—Gospel Sonnets.
310—Rushe's Charges.
311—Russian Empire.
312—Robinson's.
313-14—Talemachus' French and English
315—Aikins' Letters to his Son.
316-18—Adolphus' George III.
319-20—British Critic, £3 5*s*.
321-23—Edinburgh Review, £1 16*s*.
324-25—European Magazine, £2 8*s*.
326-27—Edinburgh " £2 6*s*.
328-29—Wilson's Egypt, £2 4*s*.
330-33—Pamela, £2.
334-36—Tom Jones, 18*s*.
337—Pictures of Palermo.
338—Vicar of Wakefield.
339-42—Burns' Works, £3 15*s*.
343—Percival's Ceylon, £3 12*s*.
344—Barrington's N. S. Wales.
345—Nisbet's Church History.
346—State of Europe. (Presented by Hon. R. Hamilton.)
347—Adams' Anecdotes.
348-61—Young's Agriculturist, £10.
362-66—Museum Rusticus, £3 4*s*.
367-68—Young's Tour in Ireland.
369-74—Wright's Husbandry, £3 12*s*.
375-76—Marshall's Midland County.
377-78—Adams' Agriculturist.
379-81—Doylin's "
382-83—Dickson's Husbandry.
384—Hart's "
385-86—Anderson's Agriculturist.
387—Gentleman Farmer.
388-92—Bath Papers.
393-94—Dickson's Agriculturist.
395—Dublin Society.
396—Small & Barrm.
397—Hume on Agriculture.
398-99—Horne on the Psalms.
400-7—Spectator, £3 4*s*. £5 5*s*. N. Y. currency is in Canada currency £3 5*s*. 7½*d*.
408—Mills on Cattle.
409-10—Pallas' Travels in Russia.
411—Whitman's Travels in Syria.
412-13—Adolphus' History of France.
414— " Reflections.
415-16—Winterbottom's Sierra Leone.

417—Card's Revolutions of Russia.
418—Pinkerton's Geography.
419—Gordon's Rebellion.
420—Population of Ireland.
421—Divernois on the Five Provinces.
422—Grant's Poems.
423–25—Palmerston's Letters.
426—Scot's Magazine, 1804.
427–28—European "
429–33—Edinburgh Review.
434—Sketches at Cape Good Hope.
435—War in St. Domingo.
436—Female Education.
437—Simpson's Plea for Religion.
438—Brown's Sermons.
439—Religion of Greeks.
440—History of Popes.
441—Abelard and Heloise (presented by Mr. Alex. Cameron, Student-at-Law.)
442—Farmer's Boy.
443–44—Marshall's Yorkshire.
445—Tull's Husbandry.
446—Court of St. Cloud.
447—Scot's Edinburgh Magazine.
448–53—Edinburgh Review.
454–57—British Critic, £4 10*s*.
458–65—Bruce's Travels, £7 4*s*.
466–69—Blackstone's Commentaries.
470—Grant's Voyages to N. S. Wales.
471–72—Cyrus' Travels.
473—McHinnem's Tour.
474–79—Plutarch's Lives, £1 13*s*.
480—Peyrmsis' Voyages.
481–89—Witherspoon's Works, £2 8*s*.
490—Sir H. Moncrieff's Sermons.
491—Chatham's Letters.
492—Mallory's Memoirs.
493—Masson's Cookery.
494—Lavater's Physiognomy.
495–98—Don Quixote, £1 18*s*.
499–502—Arabian Nights.
503–05—Edgeworth's Tales.
506–10—Tales of the Castle.
511—4—Peregrine Pickle.
515—Estelie.
516—Devil upon Two Sticks.
517–18—Excessive Sensibility.
519—Man of Feeling.
520–22—Ramsay's Works.
524—Tuckey's Voyages N. S. Wales.
525—Edwards on Baptism.
452–53—European Magazine, omitted.
526–28—Plains.
529–31—History of France.
532—Musical Repository.
533—Speechly on the Vine.
534—Selkirk on Emigration.
535—Fisher's Travels in Spain.
536—Bigland's Modern Europe.
537—Michavois Travels.
538—Scot's Magazine.
539–40—European Magazine.
541—Lady's Magazine.
542–45—Edinburgh Review.
546—Jackson on the Mediterranean.
547—Hinchley's Fall of Venice.
548–49—Repton's Odd Whims.
550–51—Father's Gift.
552–55—Children of the Abbey.
556—Lucas on Duelling.
557—Bravo of Venice.
558–60—Count de Valmont.
560–63—Men and Women.
564— of Seduction.
565–66—Tour of
567—Sermons.
568–79—Henry's History of Great Britain, £6 15*s*.
580–83—Edinburgh Review.
584–85—Scotch Magazine.
586–88—Annals of Great Britain.
589–90—Dick's Selections.
591—Cook on the Resurrection.
592–93—Robertson on Atmosphere.
594–97—Trevanion.
598—History of Masonry.
599–601—Kaines' Sketches.
602–3—Malthus on Population.
604–11—Goldsmith's Animated Nature, £2.
612–14—State of the Times.
615—Scotch Magazine.
616–17—European Magazine.
618—Lady's Magazine.
619–20—British Critic, £2 8*s*.
621–23—Edinburgh Review.
624–26—Smith's Wealth of Nations.

627–29—Ferguson's Lectures.
630–33—Sinclair on Longevity.
634–36—Pickard's West Indies.
637—Public Characters, 1809–10.
638–40—Lounger.
641—Lives of British Naval Heroes.
642—Stewart's Philosophy of Mind.
643–46—Gil Blas.
647–49—Owen on the Spirit.
650–51—Gilpin's Lives of Reformers.
652–59—British Plutarch.
660—Mason on Self-Knowledge.
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850—Lady's "
851–53—Edinburgh Review.
854—British Critic.
855–56—Annual Register, 1811.
857–61—Edinburgh Register.
862–63—Goldsmith's ———.
864–67—Modern Geography.
868—Savage New Zealand.
869–70— Magazine.

871—Castle of Otranto.
872—History of Otaheite.
873-74— " the War.
875-77—Edinburgh Review.
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921—Lady's Magazine.
922-27—Edinburgh Review.
928—Annual Register.
929— " " , 1815.
930-31—European Magazine.
932-33—Edinburgh "
934—Lady's Magazine.
935-37—Edinburgh Review.

NOTES ON THE HISTORY OF THE AMALGAMATION PROCESS.

By Robert Dewar.

(Read 27th April, 1893.)

The amalgamation process, although generally believed to be modern, is by no means so, but has really gradually developed through centuries of use to its present position in metallurgical science. We have reasons to believe that the ancient Egyptians were acquainted with this process. Indeed the attraction of mercury for other metals, especially gold and silver, but apparently more especially gold, appears to have been known from the most remote antiquity, and from time immemorial mercury has been used in "streaming for gold," as the process was called. Vitruvius remarks that gold might be recovered from embroidery and old clothes by the use of mercury, and Pliny mentions a process for the gilding of brass and other metals by gold amalgam, remarking that mercury dissolves gold, thus separating it from impurities, and on straining it through leather pure gold is left; to be sure it is really the gold amalgam that is left in the leather. The process called streaming was used to collect the fine gold disseminated through the sand composing the beds of streams or rivers, and consisted in first washing the sand, then triturating the residue with mercury and straining off the superfluous mercury through leather. By miners it was used in a similar manner. The gold ore was first ground and then triturated with mercury in mills; but these mills proved in the long run unsatisfactory as the residuum was found to retain a large quantity of the gold and it was necessary to subject it to a roasting, so that at the commencement of last century they were almost universally abandoned. An opinion prevailed among chemists about this time that unless both the silver and gold existed in the pure state in the substance under treatment by the amalgamation process, then the mercury would fail to dissolve them, and hence the belief, which there was sufficient reason for, that while fire treatment caused the ore to yield the whole of its gold, the amalgamation process did not. This opinion was supported by the most celebrated metallurgists of that period, such as Schlüter, Gellert, Wallerius and Cramer, the result being that the amalgamation process was relegated to that class of processes described as not applicable on the large scale. It may be added that the streaming process was, as used by different nations, exactly the same in procedure as the above.

According to the late Dr. Percy, the first mention of mercury in the metallurgy of silver is made in a treatise by one Biringuccio, an Italian, and published in 1540. The process is performed in a stone or timber basin in which a millstone revolves; the matter to be treated is ground in a mortar, washed and dried, then put into the hollow of above-mentioned basin and ground with the millstone, while being moistened with vinegar or water in which is dissolved corrosive sublimate, verdigris and common salt, the whole being covered with mercury. The millstone is then caused to revolve, stirring the material for two or three hours by hand or horse-power, according to plan adopted. When amalgamation is supposed to be completed the amalgam is separated by a sieve or washing, or passing it through a bag and then retorting or distilling, the gold, silver or copper is obtained. Dr. Percy also states that he (Biringuccio), in a prior description, mentions the use of vitriol and the bag as being made of deerskin leather. This is undoubtedly the result of a long development of the primal process in which merely the mercury was employed, and the earliest treatise extant on the amalgamation process in which "chemicals" (to use an expression common in some branches of the amalgamation process) are mentioned as being used in combination with mercury, thus marking the transition from a mere empirical operation to a scientific process, the result of experimental science. This process was restricted not solely to ores, but applicable to recovering gold or silver from the sweepings of mints, goldbeaters and goldsmiths. Schlüter mentions in his work, published in 1738, that the amalgamation process was used in treating the silver ores of Kongsberg, in Norway, as also the "sweep" of mints and goldsmiths' workshops was treated for recovery of metal by the amalgamation process in Germany when too far removed from smelting works or owing to poverty of stuff. Schlüter, seemingly, does not state how long prior to the appearance of his work the process had been in operation in Norway or Germany; but it is known—at least I find from a metallurgical work in my possession, printed last century—that the process was very unpopular in Europe, and, as I before stated, when Schlüter himself, and Wallerius, Cramer and Gellert thought it not practical on a large scale, it is not strange that Baron Inigo Born met with friction in his successful efforts last century to introduce the amalgamation process into European countries.

The Norwegian process, according to Schlüter, was conducted in mills consisting of a shallow cylinder surmounted by a tub, of which the cylinder is the bottom; the tub is constructed of wood, its inside walls being flush with inner surface of cylinder forming bottom, in the centre of the bottom of pan is a pivot, over which fits a cast iron cross, with arms almost touching side of pan, and being at right angles to one

another; into opposite ends of the cross fit fork-like prongs which are attached to a spindle, at the top of which is a pinion to which a rotatory motion is given by a horizontal crown wheel, as many as eighteen being driven in this manner—the power employed being water—by one crown wheel, although there were also small ones in use which a man could work. The front portion of the tub was pierced by two or three holes, in the same line on different levels, through which the sludge at different periods might be withdrawn from within. The substance was ground, if coarser than sand, and concentrated as much as possible; about two tröge (according to Dr. Percy=to from 40 to 50 lbs.) are thrown into the mill and water added, then 40 lbs. of mercury. Grinding now is started, but should the mill be able to take more it is added with sufficient water to prevent stiffness. Grinding is continued until the whole is brought to a state of mud, when the top plug in the top hole above-mentioned is now removed and the mud allowed to run off to this level, when another charge is added; this is continued until the mercury has absorbed sufficient gold or silver to make it stiff, thus impeding the rotatory motion of the cross, when the tub is emptied of slime and the amalgam taken out, cleaned and dried, and squeezed through a calf-skin bag and distilled; the distilled mercury always retaining a certain quantity of gold or silver, the retort broken and the silver taken out and melted. The amalgamation process as applied to silver had its primal demonstration on a large scale in Mexico, Chili, and Peru. Dr. Percy, in his Metallurgy of Gold and Silver, says that Bartolome Medina was generally admitted to be the inventor of the present "Patio process," having invented it in 1557 while a miner at Pachuca in Mexico; the authority for this statement being two documents, one, a report addressed to the Viceroy of Mexico, by Luis Berria de Montalvo, printed in the city of Mexico in 1643, and the other a memoir by Diaz de La Calle to Philip IV., printed in Madrid, 1646, both giving Medina the honour and credit of the invention. Dr. Percy then adds that this statement is not correct, as Don José Garces y Eguia, says that the first treatise on amalgamation as then conducted was that of Barba, published in Peru, 1639, the process being introduced into Peru by Don Pedro Fernandez de Velasco in 1571. Dr. Percy does not mention when the process was introduced into Mexico, but I have found by consulting the work before mentioned as in my possession, that the process was introduced into Mexico by the same person (Don Pedro de Velasco) five years before his introduction of it into Peru, namely, in 1566. Now, whether the Patio process was ever introduced into Mexico is a point that might be raised. The enormous amount of gold and silver that had been collected and stored by the Caciques that ruled the Aztecs, which was

found on the investiture of Mexico and Peru by the Spaniards, is a thing that is universally known and believed. Now as the Aztecs, or rather the Toltecs, whom the Aztecs subjected, were well advanced in the fine arts, is it too much to imagine that they were considerably advanced in metallurgical science, so far advanced as to enable them to have such a process? or how account for the enormous amount of metal that was in the country, as the present appearance and present existence of free metal in Mexico are not favorable to the theory that these metals were extracted by the Toltecs, and after them the Aztecs, from ore containing the metals in the free state? The objection may be made that for these ancient peoples to have had this process they must have mercury; to this the answer may be made that there are more deposits of mercurial ore in that country than is supposed, and these people would undoubtedly know how to reduce it, as at some of the localities it is found in the native or metallic state reduced by internal heat; but at the best this is merely a suggestion, and the existence of Vannocio Biringuccio's treatise which is identical in its principles with the Patio and published 26 years before the said introduction into America of the process is rather against it, and rather leads to the conclusion that it was long before known in Europe. It is unnecessary for me to describe *in extenso* the Patio process or Gallero process, as it is called in some parts of Mexico, as it has been exhaustively treated of by many metallurgists, among others Alonzo Barba, in his work published in 1639, and during this century by such as Philips and Dr. Percy; indeed, the section of Dr. Percy's work devoted to this process is the most complete extant. I might be allowed to add that there is an indiscriminate use made of the words *Arrastra* and *Tahona* by most authors in describing this process; arrastra is the name used when the motive power is given by mules harnessed to the arm, and tahona is used when the motive power is water—although when in Mexico three years ago I asked the name that was given to the arrastra which was in the Government mint at Guadalajara, and which was driven by steam, and was answered that it was an arrastra.

I might also say I noticed while in Mexico a thing which is not mentioned, at least I have failed to find it in any of the works at my command, and that was the use of men instead of horses in the Patio process. These men that tread the ore are called "Repasedors," and received four reales (4), about fifty cents Canadian or two shillings one penny (2s 1d) British, for every six (6) cargas (equal to (1800) eighteen hundred pounds avoirdupois) of ore which they amalgamated. Their motions are peculiar and indescribable, and require to be seen to be understood; the body is held erect, the right hand grasping a staff, or if a staff is not used to steady, the arms are swung in unison

with the movements of the legs, the legs are raised without bending the knee at an angle from the body, the toes turned out in descending, the heel striking the lamo first, and as the heel touches it the other leg is raised, in this way he proceeds all over his little lamero until it is finished. But notwithstanding all that has been said, there is a loss of the metal contained in the ore as well as the mercury, which is an expensive item; there is no doubt that during last century, especially towards the end, it (the Patio Process) was at its zenith in Mexico as a metallurgical process, which is borne testimony to by a report about that time by one Jose Acosta, who said that in Potosi alone seven thousand (7,000) quintals of mercury were used annually in dressing the ore, not to mention the mercury recovered from the first washing; but it has gradually lost ground since until it has been replaced at innumerable mines by other processes. In Mexico the cauldron or cazo process is one that has been used with much success. Without giving a description of it, it might be said that the apparatus instead of being as now a vessel formed either of blocks of stone or wooden staves like those of a tub, the bottom being a slab of copper 2½ inches in thickness, the metallic bottom retained the same as the head or bottom of a barrel being retained by a groove running round the interior of the vessel, the original cauldron, as invented by Alonzo Barba, was essentially "to be of copper pure, as any alloy present in the copper would involve the mercury taking it into solution; they must be in shape inverted cones and flat bottomed, the under part to have a rim of 6 or 8 inches high and half an inch broad, all beat of one piece; other plates of copper are fixed in the inside by copper nails, it must be water tight, the inside of the boiler to be lined with lime and ox-blood, the upper part surrounded by iron rings, to which is fixed a crossboard carrying at its centre a spindle with wings, which revolves, agitating the contents of the cauldron."

The cazo process or hot amalgamation was accidentally discovered by Alonzo Barba. When trying to fix mercury by boiling silver ore, mercury, and water, mixed in a copper dish, he found that he had a shorter method of amalgamation; he gradually improved on this and introduced it into practice in Peru, in which it was successful in its application to the treatment of chlorides, bromides and iodides of silver which are abundant in that country, and also the ores containing silver in the free state. It was introduced in the sixteenth century and has been in use ever since. There is no change in the process since it was invented, with the exception of the above mentioned replacement of the cauldron entirely made of copper for the one with merely a copper bottom; indeed it was averred by Barba that nothing but a cazo of solid copper would do, but the great corrosion of the copper and the consequent expense

led to the adoption of the present form; with the exception of the above mentioned change the process is identical as first practised.

In 1588 Don Juan De Corduba, a Spaniard, applied to the court of Vienna proposing "to extract silver from its ore whether poor or rich by mercury, and in a short space of time." He made several experiments on a small scale on several kinds of ore which succeeded very well, but on attempting with (20) twenty quintals he failed, and one Lazarus Erker, who was employed to give in a report on the process, disapproved of the method and here it dropped. Baron Inigo Born imputed the failure to his ore not being calcined, his not using salt and the weather being cold. A writer of that period adds to an account of this failure that "Corduba could have remedied the last cause of failure, namely, the cold weather," and I believe he could. The Tintin process-as practised in Chili was really a modification of the "streaming for gold" process, and though not generally known was invented by a Franciscan Friar; it was applicable only to ores containing free metal, the apparatus being a stone mortar nine (9″) inches deep and 9″ wide; the ore being ground along with mercury in it by an iron pestle; the metal contained in the overflow being caught and settled in tanks, afterwards to be treated by the Patio process. This was in use from the sixteenth century in Chili and Peru. The Trapiche and Maray were likewise a modification of the "streaming for gold" process, and some give Barba the credit of having invented them, although I believe he does not claim the honour. The Trapiche is the modern Chilian mill; both have been in use since the sixteenth century.

"The Tina System," or "Sistema de Cooper," as practised in Chili is really a modification of the old abandoned Norwegian process, which I before mentioned, and from about 1825 has been used very extensively and successfully, although only applicable to ores containing free metal. The machinery is greatly improved over the old Norwegian.

Stove amalgamation as practised in Mexico is merely a modification of the Patio, in which the regular process is interrupted in the middle, the ore being conveyed to an estufa or stove, where it is gently heated for two or three days when the Patio process is resumed.

During last century Baron Inigo Du Born succeeded, notwithstanding obstacles thrown in his way, in introducing his amalgamating process at Chemnitz, in Lower Hungary. The process consisted in first stamping the ore dry to a coarse sand (Du Born remarking that "wet stamping would bring on great loss of silver and expensive contrivances to prevent or recover it"). The battery consisted of three stamps to each mortar, the sole or bottom alone being cast iron, each stamp-head weighing

40 to 54 pounds. The stamping is proceeded with, the ore being damped from time to time to prevent loss by ejection; the ore is then passed through brass sieves, and that portion coarser than sand is returned to the stamps. It is then conveyed to a mill, the running stone of which is kept in a box and nothing but the admission funnel being left open. The mill stones were made of porphyry. The ore being ground fine enough was taken to the furnace to be roasted. The furnaces apparently were modified, double-hearthed reverbatories as far as I can gather from the description. When the furnace was at the proper temperature, about 30 quintals was spread evenly over the hearth and the required amount of salt and lime — the amount required being previously determined by assay — was spread over, then the whole turned with crooks and rakes until thoroughly mixed; the process then proceeded as calcination in double-hearth roasting furnaces of to-day. If during the calcination the material clagged, grinding and sifting were again resorted to. The ore was then, if properly calcined, conveyed to the boilers or amalgamators constructed according to the "recommendation" of Alonzo Barba, the stirring apparatus being put in motion by the crank of a water wheel and a horizontal rack with cogs, which being properly fixed in a groove by cross-bars, slid backwards and forwards on brass rollers and casters, the cogs of the rack catching in the perpendicular trundle and spindle of the stirrers which turned round twice by a three and a half ($3\frac{1}{2}$ ft.) foot motion of the sliding rack. The stirrers were circular segments corresponding with the sides and bottom of the boiler. The ore was mixed with sufficient water to make it fluid and the amount of mercury required being gauged from appearance; if the ore was light and voluminous more mercury was required than if it was heavy and compact, the presence of antimony or lead in the ore necessitating an excess of mercury to provide for the neutralizing effect of these metals on the mercury. The residuum or tailings were then washed in tubs provided with stirrers. The amalgam was then freed from excess of mercury by compressing small portions in the hand at a time, as the deerskin was considered too expensive a process. The distillation was then performed "per descensum" in iron pots; the under one standing up to the middle in cold running water, which passed under the hearth, the upper part appearing about two (2″) inches above it. The amalgam made into balls and placed in an iron cullender fixed to an iron tripod was set in the bottom pot, covered on the inside with a coarse cloth. The upper pot was then inverted on the lower one and luted; fire then being put about it the mercury was sublimed and condensed in the bottom pot kept cool by the water; a strong red heat being kept up

for five or six (5 or 6) hours, the cloth is converted into a tinder and afterwards scraped off the cullender by a brass brush.

In 1790 the "Freiberg," or "Barrel process," of amalgamation was introduced at Halsbrücke, near Freiberg, in Germany. The ore contained, beside the silver, antimony, arsenic, copper, lead, iron, and zinc, and sometimes gold, bismuth, nickel and cobalt; in small quantities the silver varied all the way from 15 to 200 ounces per ton, these were mixed to make an average of 75 to 80 ounces per ton; latterly the rich and poor were kept separate, as it was found to be more economical to do so. It was required at least that 25 per cent. of iron pyrites be contained in the ore. If the amount contained in the ore was less than this, addition was made either of pyrites or sulphate of iron, when the pyrites or other sulphides were in excess, the roasting was resorted to to get rid of it, as in the other processes. The ore was roasted in a state of fine division with salt, the oxidation of the pyrites causing the evolution of chlorine and hydrochloric gases, which coming in contact with silver sulphides and other salts of that metal, converts them into chloride; the ore was ultimately amalgamated in revolving barrels; a minute description of this process may be found in any of the standard works on metallurgy. This process was abandoned at Halsbrücke, in 1856, on account of its expensiveness and its unsatisfactory results when applied to certain classes of ore. Over half a century had changed the relationship existing between the prices of labour and fuel; so that it was found to be advantageous to give up the amalgamation process and smelt the ores with others containing lead. This process has also been in use to a certain extent in the United States and also in Mexico. The amalgamation process employed at the Mansfield Copper Works to obtain the silver contained in copper matter was similar to this, but has since been abandoned for Ziervogel's process.

In 1859 the Washoe or Pan process was invented to treat successfully the ores of the great Comstock lode, situated at Virginia City in the Washoe District, State of Nevada. It received the name "Washoe" from its first being introduced in this district. It really owed its invention to the failure of both the Barrel and Patio processes, as both from metallurgical and climatological conditions these processes were unsuited for and proved a failure in the attempts made to apply them to the ore, which contained from $30 to $150 per ton of 2,000 lbs., besides zinc blende, galena, argentite, iron and copper pyrites, and sometimes stephanite and polybasite. The gold occurring to the amount of one-third of the total value of the ore, one portion of the ore only could be treated by the Barrel amalgamation process, and this was that portion

which assayed above $150 per ton; all the rest of the ore below this being treated by the Washoe process. In this process the ore is ground wet in stamp mills; after having been reduced to a suitable size for feeding, the ore passes off in suspension in water through sheet-iron screens and is collected in reservoirs from which it is removed to the pans to be ground with mercury and hot water, with or without the addition of cupric sulphate and common salt—the amount of this used varying in different works but generally consisting of from one to three pounds—to each charge of ore which consists in the old pans—those of Varney, Wheeler, Hepburn and Peterson—of 1,200 to 15,000 lbs. of ore, but in the later and larger pans—those, for instance of McCone and Mountain—the charge is 4,000 to 5,000 lbs. The description of this process and the machinery employed in it have been so voluminously treated of that it would be superfluous for me to again describe it. Suffice it to say that the benefit of the "chemicals" is doubted by some and the real action of them is not understood. As far as the conducting of the live steam into the pulp is concerned, either loose or in the shallow chamber, it appears to me that its principal effect and value is that it keeps to a certain extent the mercury from flouring. The Boss continuous process, patented by Mr. Boss of United States, is a modification of this process, in which a series of pans are employed, into which the pulp passes, instead of it passing directly into the separators.

Although amalgamation of gold ores was effected in the streaming mills, arrastras and Chilian mills for centuries, it was not until this century that amalgamation was effected in the batteries of stamp mills, and at the present time the greatest portion of the gold ores are treated in this way, amalgamation being effected by the mercury added and the amalgamated copper plates fixed to the inside of the mortar boxes or caught on the amalgamated apron riffles of the sluices. A great many contrivances have been invented for the tailings besides the amalgamated rifles; blankets, sluices were used, and also various jiggers, buddles, vanners, etc., for concentrating these tailings, which are afterwards treated in such machines as the Attwood amalgamator, the Eureka rubber pans, the Hungarian mill (which was used at Chemnitz and other localities), and various other inventions. Stamps themselves date far back as grinding mills, though not so as amalgamators. Various mills of late years have been invented as direct amalgamators, notable among which is the Crawford mill. This mill consists of a pan or basin of cast iron supported on four iron uprights, which are attached at the bottom to a circular iron frame which forms the base. The bottom of the pan or basin is elevated at its centre and gradually slopes to the sides; a little over half-way to the sides the bottom suddenly is depressed,

thus forming an annular groove round the outer edge of the bottom of the basin. Through the centre of the bottom of the pan or basin, where there is an opening, a short upright piece of shafting passes, which fits at the bottom into a journal in the centre of the base. After passing through the opening in the bottom of pan, it is attached at its top extremity to a false bottom, which fits upon the true bottom, almost completely covering the above-mentioned groove, leaving only a small space open communicating with the upper part. The sides of this false bottom, as also the sides of the pan at the same level, have steel castings attached to them. On the area formed by the steel castings, which form also a groove which forms a half circle and a complete ring round the pan, balls of iron are placed which revolve when the false bottom, which is attached to the upright shaft, is set in motion by gearing attached to the shaft between the bottom of pan and base of stand; over the pan is bolted a dome, which at its apex continues perpendicular to form a pipe, round which near its top is a circular stage with a spout; inside this "pipe" fits a second, whose mouth is expanded to a filler; the bottom extends down further than the commencement of the apex of the dome to almost the level of the tops of the balls; this acts as the hopper through which the ore is fed. To the bottom, at one side of the first-mentioned annular groove, is attached a mercury pipe, through which the mercury is fed to the mill; a water pipe enters at that part of the centre of the bottom where the upright shaft, bearing the gearing for driving, enters; an oil supply pipe also supplies oil to the bearing of the shaft as it enters the bottom of pan.

The ore is fed by the hopper and is ground by the circular motion of bottom and balls to one hundred to two hundred (100 to 200) mesh. The first-mentioned annular groove, is filled with mercury, into which the finely divided gold gravitates through the water; the matrix and other minerals being finely divided and having a less specific gravity than gold are forced up and carried off by the water, the water passing off by the opening formed by the pipe of the hopper and the continuation pipe of the dome, it rises through this space, falls over on the circular stage and flows away by the spout; the water enters with a considerable upward pressure, which keeps everything but the gold from reaching the mercury, this pressure is exhausted by the lateral sweep of the balls and expansion in the wide dome. The mill is claimed to be able to treat any and every ore of gold, arsenical, pyritical, antimonial or the most refractory ore and save over (90%) ninety per cent., requiring less power than "stamps," and one-fourth (¼) less water, and one very good thing about it, I think, is that the tube by which the amalgam is drawn off is securely

padlocked, thus preventing the stealing of amalgam, which, as we are all too well aware, has been practised too often in the past.

Thus the amalgamation process stands to-day the result of development from the old "streaming for gold" mill to the stamp mills, and mills of Crawford type; from the process of Vanoccio Biringuccio to the Patio, Barrel or Freiberg, and Pan or Washoe process. The use of chemicals seems to have received a fair share of consideration, although we are a little startled by the statement made in an anonymous Latin account of amalgamation similar to the Patio in which ground horns, bricks, and sulphur are added to the usual complement of chemicals, and said to have been practised in Guatemala by the writer; the sulphur astonishes us when we know the dire results of its coming in contact with either the gold or mercury in the amalgamation process. The applications in November, 1864, by Dr. Wurtz, of New York, and in February, 1865, by Mr. Crookes, F.R.S., of London, for the patent for the use of sodium amalgam in the amalgamation process, Wurtz for America, and Crookes for Britain, revealed the fact that both had been experimenting on the same principle for the benefit of science without the knowledge of the other. This is at least one point of general interest in the amalgamation process; but although extensively tried both in California and Australia, the results obtained differed greatly, and it was not used as much as had been expected, although up to the present it has its partisans, and to a certain extent, it had a beneficial influence. I have noticed that mill men prefer mercury that has been formerly used which is known to contain gold or silver amalgam, as it is supposed to be more effective in absorbing the metals than the clean mercury. The amalgamation process, according to some, has reached its zenith; whether this is so or not is hard to say, whether more brilliant inventions and discoveries will be made in the application of the amalgamation process remains to be seen. Time alone will tell. One thing is apparent to all, namely, that other chemical processes are gradually gaining ground and recognition, although our dear old friend is holding the ground bravely, and it may be said in conclusion that it can look back at its past and honorable history, as a nobleman looks back over his long line of descent, and may treat with scorn the upstart claimants of a day for the honorable position of the Amalgamation Process in Metallurgy.

NOTE.—A number of attempts have been made to apply electricity in the amalgamation process by means of sending electric currents through amalgamated rifles, terraces and aprons; noticeable among others was the machine invented by one Charles M. Dobson in 1887, in Toronto,

considerable notice of which was taken and a full description given by the journals of that date. The electricity was applied in this machine by means of a carbon shod diaphragm, which moved backwards or forwards over the surface of amalgamated copper plates, the electricity being supplied by a small dynamo. The advantages claimed for this invention were that the electricity as conducted by the carbon shoes kept the surface of the mercury clean and bright, volatilizing any sulphur or arsenic which came in contact with it and agitating any other metallic constituent present, thus keeping them from coming in contact with the mercury and allowing the gold and silver the full benefit of the pure mercury. No further comment is required on this subject, further than that these inventions enjoyed existence for a very short time.

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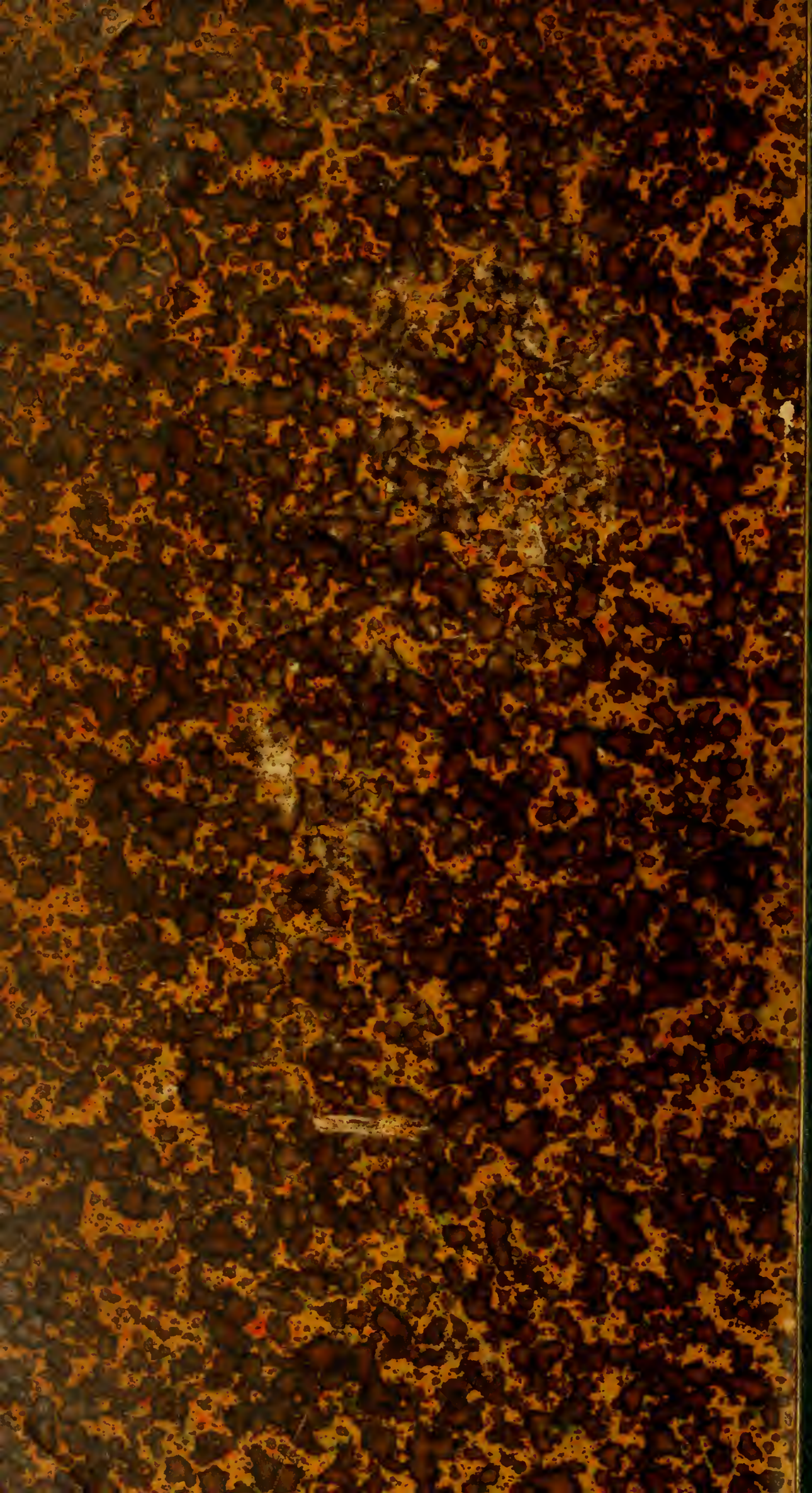
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